## Borough of Southend-on-Sea.

# ANNUAL REPORT

OF THE

# MEDICAL OFFICER OF HEALTH

## FOR THE YEAR 1909,

BY

## CHARLES GRANT PUGH,

M.D. Lond., B.Sc. Lond., D.P.H. Camb., M.R.C.S. Eng., L R.C P. Lond ,

Medical Officer of Health and School Medical Officer;
Borough Bacteriologist; and
Medical Superintendent of the Borough Sanatorium and
Small Pox Hospital.

Southend-on-Sea:
Francis & Sons, Printers & Stationers, 55 High Street.

## TO THE HEALTH COMMITTEE.

Mr. Chairman and Gentlemen,

I beg to present my Annual Report on the Health of the Borough during the year 1909, as required by the regulations of the Local Government Board.

The nett death rate for the year proves to be 10.29 which though slightly higher than that for the year 1908 is otherwise the lowest on record, comparing with 15.54 ten years ago and 12.42 the average for the intervening years. As is pointed out later in the report, the slight increase in the death rate this year is due partly to unfavourable meteorological conditions which have chiefly affected the aged and partly to the greater number of deaths from Tuberculosis recorded this year. As the great majority of patients who die from Tuberculosis have come to reside in the town in the hope of prolonging life after contracting the disease elsewhere it is obvious, paradoxical as it may seem, that the very slight increase in the death rate as compared with 1908 is largely accounted for by the increased reputation of the Borough for healthiness.

The Birth rate for the Borough, as for the country generally, continues to fall year by year and has now reached the very low rate of 18.59 per 1,000 as compared with 25.6 the figure for England and Wales. As explained later, this great disparity is probably explained by a different age and sex distribution of the inhabitants in the Borough from that presented by the Country as a whole, but no correction for this disturbing factor can be made until the results of the next Census are announced.

The incidence of the notifiable infectious diseases upon the inhabitants continues to be markedly below that of the majority of other towns of corresponding size, while the zymotic death rate being .52, is the lowest on record, comparing extremely well with 1.12 the figure for England and Wales. The most noteworthy feature of the health report is the absence for the first time on record of any deaths during the year from typhoid fever, from which disease, moreover, the Borough has been practically immune, only one indigenous case having occurred. A study of the table given under the heading "Typhoid Fever" and showing the remarkable diminution in the number of cases of this disease which has characterized each successive year will convince even the most sceptical of the beneficent results of modern public health work.

The infantile mortality rate is for the third time in succession below 100 being but 74.62, which is the lowest figure on record, comparing with 91.98 in 1908, 94.5 in 1907 and 135.13 the average for the 10 years 1899-1908, while the corresponding figure for England and Wales for 1909 is 109. The weather conditions prevailing during the year though prejudical to the aged and infirm cannot be considered other than particularly favourable to infants; to the cool and comparatively wet summer and autumn can doubtless be attributed the very slight prevalence this year of infantile diarrhœa and it is to the very small number of deaths from this disease that the low infantile mortality is in the main due.

Each year public health work tends more and more to be concerned with the individual, and the days when the efforts of those engaged in Preventive Medicine were almost solely directed towards drainage and kindred subjects have long since passed away. Experience combined with the teachings of bacteriology has shown that in preventing the spread of infection attention to the sanitary surroundings of the people will not alone prevent outbreaks of diphtheria or scarlet fever, and that as much or even greater importance must be attached to the detection and isolation of individuals suffering from mild and unrecognised attacks. Similarly, as regards the general health of the public, in any effort to improve the physical well-being of the coming generation, the need for the detection and remedying in early childhood of latent defects in the individual is equally apparent, for it is obvious that otherwise the results of work directed solely to the improvement of the environment of childhood must necessarily be incomplete. The initiation of systematic medical inspection of school children thus marks a new era in the work of preventive medicine, the good results of which on the public health will become increasingly manifest as time passes.

As regards general sanitary work, every endeavour has been made to maintain the good reputation which the Borough now enjoys as a healthy place of residence, constant attention being paid to the sanitary condition of the houses and to the cleanliness and purity of the milk, meat, and other food supplies.

Although delays, vexatious but unavoidable, occur in the completion of various schemes necessary for the public health and wellbeing, such as the erection of a dust destructor, the making up of many of the new roads, and the carrying out of other similar improvements, it may be confidently said that Southend-on-Sea is, as regards its sanitation, advancing with the times, and that no effort is being spared to maintain its position as one of the foremost health resorts in the country. The Sanitary Inspectors continue to render good service to the community in seeing that nuisances likely to affect the health of the inhabitants are promptly abated and I would testify to the unfailing tact and discretion with which they discharge their difficult duties, and to which much of the good feeling existing between the public and the Health Department is due. In justice to the inspectors, it is only fair to remark that some ratepayers appear to be under the erroneous impression that the Corporation officials are invested with plenary powers by means of which any condition likely to affect their health or even comfort can be removed forthwith; that the Public Health Acts and Byelaws made in accordance with them confer on the Sanitary Authority only very limited powers and that considerable delay often results owing to the necessity for service of the legal notices are often lost sight of, with the result that the officers of the Council are frequently most unjustly blamed for not taking action in cases where possibly any such action would be illegal and such as to render the Council liable to heavy damages.

In conclusion I would record with satisfaction the keen interest shown by each member of the Council and more particularly by those on the Health Committee in any matter likely to affect the health and reputation of the Borough and to them I am especially indebted for the kind consideration and invariable courtesy which they have always shown me.

I am, Mr. Chairman and Gentlemen,
Your obedient Servant,
CHARLES GRANT PUGH.
*31st January, 1910.* *Medical Officer of Health.*

# BOROUGH OF SOUTHEND-ON-SEA.

---

## Health Committee.

*November, 1909, to November, 1910.*

Mr. Councillor Nerney (Chairman).
The Mayor (Mr. Councillor W. R. King, J.P.).
Mr. Alderman Francis, J.P.
Mr. Councillor Allen.
Mr. Councillor Bluck.
Mr. Councillor Bradley.
Mr. Councillor Dunnett.
Mr. Councillor Forsyth.
Mr. Councillor Hubbard, J.P.
Mr. Councillor Wright, J.P.

**Town Clerk** -
Mr. H. J. Worwood.

**Honorary Consulting Medical Officer of Health** -
Dr. A. Clough Waters, J.P.

**Borough Engineer**—
Mr. E. J. Elford, M.I.M.E.

**Assistant Borough Engineer**—
Mr. R. H. Dyer,

**Matron of Borough Sanatorium**—
Miss A. E. Thompson.

## Public Health Staff.

| | |
|---|---|
| *Chief Inspector of Nuisances* | W. Whur.* |
| *Assistant Inspector of Nuisances* | E. W. Penn.*†‡ |
| *Assistant* ,, | F. W. Maynard. |
| *Clerk* | F. T. Webber. |
| *Four Disinfectors.* | |
| *One Laboratory Assistant.* | |

* Associate of the Royal Sanitary Institute.
† Certificate of Royal Sanitary Institute.
‡ Certificated Meat Inspector (Royal Sanitary Institute).

**Assistant Medical Officer of Health & Assistant School Medical Officer**—
W. Davies Higson, M.B., Ch.B., D.P.H. (Liverpool)

**Medical Officer of Health and School Medical Officer**—
C. Grant Pugh, M.D. (Lond.), B.Sc. (Lond.), D.P.H. (Camb.)
M.R.C.S. (Eng.), L.R.C.P. (Lond.).

# BOROUGH OF SOUTHEND-ON-SEA.

## Physical Features and Geological Character of the District.

The Borough of Southend-on-Sea lies on the north coast of the Thames Estuary. It thus has a south aspect. During 1909 it comprised three wards and five ecclesiastical parishes. A sixth ecclesiastical parish of St. Saviour's has recently been formed out of St. Mary's, but its boundaries have not yet been communicated to me. The front of the old town in the east is situated at the sea level, but towards the west the houses on the front to which access is afforded by Pier Hill are situated on the Cliffs from 80 to 100 feet above sea level.

Generally speaking the central part of the Borough stands on high ground. The direct London Road from its junction with the Broadway (a continuation of High Street) where the level is 93.0 feet above O.D., gradually rises in a westerly direction until a level of 120 feet is reached at the junction of Leigh Road and West Road. In an easterly direction this main road falls first gradually and then rapidly to Bournes' Green, which is only 20.4 feet above ordnance datum. The London Road occupies the crest of ridge of the high ground from which the ground slopes both north and south. The southern slope is divided into two main valleys, eastern and western.

The surface formation varies, but, generally speaking, Old Southend, Southchurch and Prittlewell have a surface soil of river gravel, while a considerable part of Westcliff is on London Clay several hundred feet in thickness.

Situation—Latitude 51° 32′ to 51° 34′
East Longitude 3° 39′ to 3° 45′

Elevation—Varies from sea level to 125 feet above ordnance datum.

## STATISTICAL SUMMARY, 1909.

| | |
|---|---|
| Acreage | 5,172 |
| Census Population, April, 1901 | 28,857 |
| Population estimated to middle of 1909 | 61,268 |
| Occupied Houses, June 30th, 1909 | 11,560 |
| Average number of Persons per House in 1901 | 5·3 |
| Density of Population per acre in 1901 | 5·76 |
| Density of Population per acre in 1909 | 11.84 |
| Annual Rate of Births per 1,000 Population | 18.59 |
| Nett Deaths in Borough | 631 |
| Nett Annual Rate of Mortality per 1,000 Residents | 10.29 |
| Excess of Registered Births over Deaths of Residents | 508 |
| Zymotic Death Rate | .52 |
| Infantile Mortality | 74·62 |
| Rainfall during 1909 | 25·77 inches |
| Rain fell on | 153 days |
| The greatest rainfall month was October | 4.02 inches. |
| The greatest rainfall in 24 hours was on October 26th | 2.00 inches. |
| The least rainfall month was January | .80 inches. |
| The month with fewest wet days was May | 6 days. |
| The months with most wet days were October and December | 19 days each. |
| Average annual rainfall for previous 17 years | 20.51 inches. |
| Excess of Rainfall during 1909 as compared with average for 1892-1908 | 5·26 inches. |
| Rateable Value for the Borough, 1909 | £377,789 |
| Hours of Sunshine during 1909 | 1,754 hours |

The following table is drawn up to make possible as regards the vital statistics of 1909 a comparison between Southend-on-Sea and other Urban Districts, and England and Wales as a whole.

| | Annual Rates per 1,000 Living | | | Infantile Mortality |
|---|---|---|---|---|
| | Births | Deaths from all causes | Deaths from seven chief Epidemic Diseases* | Deaths of Infants under 1 year per 1,000 births |
| England and Wales ... | 25·6 | 14 5 | 1·12 | 109 |
| Rural England and Wales... | 25·6 | 14·5 | ·80 | 98 |
| 76 Great Towns ... .. | 25·7 | 14·7 | 1·42 | 118 |
| 143 Small Towns ... . | 24·8 | 13·9 | 1·08 | 111 |
| Southend-on-Sea ... | 18·59 | 10 29 | ·52 | 74 |

*Small Pox, Measles, Scarlet Fever, Whooping Cough, Typhoid Fever, Diarrhœa and Diphtheria.

It will be seen from the foregoing table that the vital statistics for the Borough of Southend-on-Sea compare favourably with those for the rest of the country. As in past years the birth rate is very much lower than the average for the country generally, but this can probably be accounted for as is mentioned under the heading Births. The death rate still remains much lower than the average while the zymotic death rate is less than half that recorded for the rest of the country. The infantile mortality rate is very much lower than that of even rural districts.

The Southend Zymotic Death Rates will be seen from the following table :—

| Zymotic Diseases | Death Rate per 1,000 Inhabitants |
|---|---|
| Measles ... ... ... | ·146 |
| Scarlet Fever ... ... | ·048 |
| Diphtheria, including Membranous Croup | ·065 |
| Typhoid Fever ... ... | ·000 |
| Whooping Cough .. .. | ·179 |
| Small Pox ... ... .. | ·000 |
| Diarrhœa ... ... .. | ·081 |

# VITAL STATISTICS.

# VITAL STATISTICS.

## Population.

The population of the Borough at the census in 1901 was 28,857, but in the intervening years the growth of the town has been so remarkable than any conclusion as to the present population based on the assumption that it has increased each year in the same ratio as was noted between the two last census years, 1891 and 1901, would probably be quite fallacious. Consequently, as in former years, an enumeration of houses actually occupied during the last weeks of June has been made and an approximate estimation of the mid-year population has been obtained by multiplying the figure thus found by 5.3, the number of persons per inhabited house at the last census.

At the end of June the number of inhabited houses was 11,560, as compared with 10,831 at the similar period in 1908. Hence the mid-year population is estimated to have increased from 57,399 in 1908 to 61,268 in 1909.

These estimates of population must necessarily be approximate only, but are probably not very far from the truth. The main fallacy is in the assumption that the average number of persons resident in each house remains the same as in the census year and evidence on this point is very difficult to obtain without a systematic house-to-house enumeration. The whole character of the town has changed since 1901, houses of a very different type to those then existing have been erected, large boarding houses and residential hotels have been opened, tenement houses have become common, persons with young families have come to reside in the Borough for the benefit of the health of their children, all these factors tending to increase the number of persons per inhabited house. On the other hand, large numbers of old persons retired from business are now residents in the Borough, and, as the family in these instances frequently consists of two or three persons only with perhaps a maidservant, this group would tend to lower the unusually high average noted at the last census. Taking all the circumstances into account, those best qualified to give an opinion on the point think that the factor 5.3 is as likely to be correct as 5.2, which is suggested by some persons.

The average resident population in the Borough, especially during the summer months must necessarily be considerably higher than 61,268, as in addition to the visitors and excursionists, there is a large influx of shop assistants, domestic servants, etc., at the commencement of the season, and although only temporarily resident these persons have to be reckoned among the permanent population if death or infectious disease overtake them during their sojourn in the Borough. As will be again referred to, later, deaths of invalids who come here for change of air have to be recorded among the deaths of residents unless they die in public institutions, and it will be seen consequently that the mortality and sickness rates calculated on the estimated population are much more likely to err by being too high than in the other direction.

The resident population of the five ecclesiastical parishes is estimated to have been at the mid-year as follows :—

| Parish | Inhabited Houses | Population. |
|---|---|---|
| St. John's ............... | 3,004 | 15,922 |
| St. Mary's ............... | 3,342 | 17,712 |
| St. Alban's ............... | 1,927 | 10,213 |
| All Saints' ............... | 2,567 | 13,605 |
| Southchurch ............ | 720 | 3,816 |

The first four ecclesiastical parishes are included in the civil parish of Prittlewell, which therefore has an estimated population of 57,452, as compared with 27,245 at the census in 1901; the population of the civil parish of Southchurch has since 1901 increased from 1,612 to 3,816.

As compared with 1908 there is an increase in the number of habitable buildings of 587, while there is a decrease of 23 per cent. in the number of empty buildings. The increase in the number of inhabited buildings is 729 and the population is consequently estimated to have increased by 3,869; of this the "natural increase," *i.e.*, the excess of births over deaths, accounts for 508, the remaining 3,361 being due to the number of new residents in excess of those leaving the Borough.

The following table shows the number of habitable buildings and the number of empty houses in previous years.

| | No. of habitable buildings. | Increase of inhabited houses as compared with previous years, | No of empty houses excluding new houses not yet occupied. |
|---|---|---|---|
| 1900 | 5,402 | 579 | 245 |
| 1901 | 6,013 | 611 | 417 |
| 1904 | 8,316 | ..... | 402 |
| 1905 | 9,575 | 1,259 | 824 |
| 1906 | 10,413 | 838 | 922 |
| 1907 | 10,913 | 500 | 869 |
| 1908 | 11,447 | 534 | 616 |
| 1909 | 12,034 | 587 | 474 |

## Density of Population.

The area of the Borough is 5,172 acres, giving a density of 11.84 per acre as compared with 5.76 in 1901.

## Births.

The number of births registered in the Borough during the year was 1139; of these 575 were of girls and 564 of boys. There were 37 illegitimate births, giving a rate of 3.24 per cent. as compared with an average rate of 2.65 per cent. during the previous 10 years and 3.99 per cent., the figure for England and Wales in 1908.

The birth rate for the year calculated on a population of 61,268 is 18.59 per 1,000, as compared with 19.12 last year and 22.98 the average for the previous 10 years.

The birth rate for England and Wales for 1909 was 25.6, but it is impossible to make any comparison between the figures, as the age and sex distribution in the Borough is probably very different from that in the country generally. The large number of invalids, old people, and young children, who come to reside in the Borough on account of infirmity and the great number of unmarried persons employed as domestic servants, shop assistants, etc., in the town account probably in great part for the apparent disparity. The only fair method of estimating the birth rate would be to find out the number of births in proportion to the number of married women of child-bearing age resident in the Borough, but this of course is impossible so long after the census year. The number of births, and the birth rates for the different parishes are shown in the following table from which it will be seen that the figures for the parishes of All Saints and Southchurch closely approximate to that for England and Wales.

| Parish | Population | No. of births | Rate per 1000 |
|---|---|---|---|
| St. John's ......... | 15,922 | 238 | 14.94 |
| St. Mary's ......... | 17,712 | 319 | 18.01 |
| St. Alban's ......... | 10,213 | 175 | 17.13 |
| All Saints ......... | 13,605 | 315 | 23.15 |
| Southchurch ......... | 3,816 | 92 | 24.10 |

## Deaths.

Six hundred and sixteen deaths were registered in the year as having occurred in the Borough, giving a death rate of 10.05.

Of these deaths, however, twenty-three were of non-residents, persons who came into the Borough on account of sickness and infirmity and died in public institutions here; these deaths should consequently be deducted, but, on the other hand, there should be added 38 deaths, that number of residents having died outside the Borough in institutions to which they had resorted on account of illness, etc. The nett deaths belonging to the Borough were consequently 631, giving a death rate of 10.29, compared with 9.39 last year, but with that exception the lowest ever recorded, being 2.13 per 1,000 lower than the average for the previous 10 years.

The official method of estimating death rates is obviously unfair to health resorts where the deaths of all persons, residents and visitors alike, have to be recorded except in the case where the visitors have come temporarily to the town on account of illness and have died in public institutions here. Each year there die in private houses in the Borough a large number of phthisical and cancerous patients, who have only arrived in the town a few weeks or months, and who have come to reside here in the hope of prolonging life. Several of the persons whose deaths from drowning are included in the tables, not only were not residents in the town, but were not even visitors, though, inasmuch as their bodies were found lying on the foreshore of the Borough the inquests were held here. Moreover, the residents in the Borough are not a normal population, regarded from the point of view of age distribution, inasmuch as there is probably an excess of old and young persons as compared with the country generally; a large number of old people among whom the death rate is necessarily higher than the average come to spend the autumn of their life in the Borough, while on the other hand, a large proportion of the children are of delicate constitution, whose parents have taken up their permanent residence here with the object of restoring them to robust health. These factors all tend to augment the total number of deaths while the death rate is further increased owing to the large influx of holiday visitors not being taken into account in estimating the population, although deaths amongst them are necessarily included in the statistics.

The slight increase in the death rate this year as compared with last year is due to several causes. The unfavourable weather experienced in the early and also in the later months of the year, doubtless, hastened the end of a number of invalids while it told with special severity on the aged, each spell of severe weather being followed by an increase in the number of deaths of the latter. The slight increase from 74 to 88 in the number of deaths attributed to respiratory affections such as pneumonia, bronchitis, etc., does not probably represent the entire effect of the unfavourable meteorological conditions, which doubtless caused indirectly many deaths which have had to be recorded in Table IV under the heading of "All Other Causes." Ninety-nine persons died from tuberculosis, as compared with seventy-five last year, but as the majority of the deceased were as in previous years suffering from the disease when they came to reside in the Borough, this is no reflection on the healthiness of the borough, though it accounts for very nearly half the slight increase of .9 per 1,000 in the death rate.

To obtain a death rate which can be compared with that of other areas it is necessary to make some correction for the different age and sex distribution which exists in the Borough as compared with the country generally. As since the last census such a long period has elapsed during which Southend-on-Sea has markedly increased in size and altered its character as a residential town, any correction based on the figures then obtained as to the number of inhabitants at the different age periods must be looked upon as being approximate only, for it is necessary to assume that the proportion at the different ages has remained constant since 1901. My predecessor, making this assumption, calculated that if the age and sex distribution of the local population at the present time was the same as that in England and Wales generally at the time of the census, the number of deaths which would occur would be 1.056 times the number which actually do occur with the present age and sex distribution. Applying this factor we get a " corrected " death rate of 10.86, the corresponding figure for England and Wales being 14.5, for the 76 great towns 15.6, for the 143 smaller towns 14.5, and for the rural districts 13.6.

## Uncertified Deaths.

Forty three deaths were registered during the year without a certificate of cause of death by medical practitioners or an inquest being held. This gives a percentage of 6.9 which compares unfavourably with previous years, as will be seen from the table, and is very much higher than the corresponding figure for the majority of towns similarly circumstanced.

| Year | No. of deaths registered in district. | No. of uncertified deaths. | Percentage of uncertified deaths |
|---|---|---|---|
| 1900 | 416 | 27 | 6·5 |
| 1901 | 507 | 22 | 4·3 |
| 1902 | 439 | 24 | 5·4 |
| 1903 | 448 | 29 | 6·4 |
| 1904 | 592 | 31 | 5·2 |
| 1905 | 508 | 26 | 5·1 |
| 1906 | 578 | 26 | 4·4 |
| 1907 | 564 | 25 | 4·3 |
| 1908 | 519 | 30 | 5·5 |
| 1909 | 616 | 43 | 6·9 |

In many of our large towns the precentage of uncertified deaths has been reduced almost to nil and the proportion for the country generally is steadily falling, having declined from 4.7 per cent. in 1879 to 1.44 in 1908. The Registrar General in his last annual report mentions that the percentage of uncertified deaths was excessive in some of the 76 large towns and quotes the figures for Birmingham and Gateshead 3.8 and 5.4 respectively as instances. Southend has always held an unenviable position in this matter, and although, doubtless, many of the uncertified deaths are of invalids who have come to reside in the town on account of disease and infirmity, it is difficult to understand why such a large percentage of the total deaths should remain uncertified.

The uncertified deaths are not, I understand, registered by the Registrar until the Coroner after reviewing the circumstances has decided that no inquest is necessary. Many of the patients had obviously been under medical treatment for their illness some time prior to its fatal ending, but doubtless owing to the doctor not having seen them for some time prior to death a medical certificate could not be given, and as death was obviously due to natural causes an inquest was unnecessary. Unless some suspicious circumstances existed, it would of course be absurd to hold an inquest upon a person who dies suddenly if he were known to have an affection of the heart liable to cause sudden death and many of the uncertified deaths belong to this category. I am, however, strongly of opinion that inquests should be held as to the cause of death of all children unless a medical certificate is forthcoming—at any rate the law should be altered so as to provide for the examination in all such cases of the body of the deceased by a medical man, who, if necessary, should carry out a postmortem examination. No safeguard against infanticide is provided if the death of an infant can be registered on the statement of the parents that the child died suddenly of congenital debility, when according to the Midwife present at the birth 12 hours previously, the infant was strong and vigorous when she last saw it an hour after birth; even if no suspicion of intentional homicide enters into the question, an inquest would bring to light any negligence in not providing proper treatment for children during their last illness.

A death of an adult, aged 41, was registered as being due to "Enteritis, Heart Failure," and being uncertified enquiries were made as to the nature of the illness in case it might prove to have been enteric fever. It appears that the deceased complained of headache and feverishness on the afternoon of 22nd September, so went to bed early, but got up on the evening of the following day and sat for a short time by the fire; on the 24th, he was not so well and stayed in bed all day, his main symptoms being apparently diarrhœa and at 7 a.m. on the 25th he was found dead in bed. He was a lodger in the house and received no medical or other treatment as the other residents in the house seemed not to have troubled much about his illness. The doctor, who was called in after death, fully expected that an inquest and a postmortem examination would be held, but the Coroner was apparently satisfied that the death was one from natural causes. The man possibly did die from enteritis, but as to the cause of the latter, whether poison, unsound food, etc., there was no evidence. An inquest ought, in my opinion, to have been held, if only to ascertain whether the other residents in the house were not negligent in allowing the man to die without providing him with medical assistance or helping him in any way. Inquests in similar cases are at least as likely to serve a useful purpose as those held on the bodies of persons drowned as the result of boating accidents, etc.

Apart altogether from the possibility of the non-discovery of cases of homicide and negligence the fact that so many deaths in the Borough are registered as "Uncertified" is to be regretted as it prevents the compilation of proper vital statistics.

### Inquests.

Thirty-four deaths as to the causes of which a Coroner's inquest was held were registered during the year and may be classified as follows :—

SUICIDES 10.

| | |
|---|---|
| By poisoning by Oxalic acid .............. | 1 |
| ,, Prussic acid .............. | 1 |
| ,, Spirits of Salts........... | 1 |
| By burning .................................. | 1 |
| By hanging .................................. | 1 |

| | |
|---|---|
| Cut throat | 1 |
| By drowning or shock from attempted drowning | 3 |
| On the railway | 1 |

## ACCIDENTS 12.

| | |
|---|---|
| Collision between carts | 1 |
| Horse kick | 1 |
| Run over by motor car | 1 |
| Railway train | 1 |
| Burns | 1 |
| Fall | 1 |
| Drowning | 4 |
| Poisoning by laudanum | 1 |
| Overlying | 1 |

## NATURAL CAUSES 7.

| | |
|---|---|
| Septic poisoning following child birth | 1 |
| Intestinal obstruction | 1 |
| Heart failure | 2 |
| Exposure | 1 |
| Cerebral Hæmorrhage | 1 |
| Glanders | 1 |

## OTHER CAUSES 5.

| | |
|---|---|
| Suffocation from want of attention at birth | 1 |
| Found drowned | 2 |
| Found dead from suffocation of unknown causation | 1 |
| Starvation, Neglect, Manslaughter | 1 |

In 8 of the cases of suicide, the jury brought in a verdict that the patient was temporarily insane at the time of the act and in the other two cases that there was no evidence to show the state of the deceased's mind.

### Ages at Death.

Of the 631 deaths, 85 were of infants under one year of age, which, with one exception, is the lowest recorded since 1896, although the number of births per annum has increased in the interval from 474 to 1139.

At the other extreme of life, there died 195 persons aged 65 and over. Of these :

51 were between 65 and 70
57 ,, ,, 70 ,, 75
42 ,, ,, 75 ,, 80
23 ,, ,, 80 ,, 85
12 ,, ,, 85 ,, 90
8 ,, ,, 90 ,, 95
2 ,, ,, 95 ,, 100

The meteorological conditions were distinctly unfavourable to old persons both in the early and in the late months of the year. The greater number of these old people died either from old age or from pulmonary affections.

The greatest number of deaths among the aged occurred in March and December when there occurred 31 and 29 deaths respectively of persons over 65.

**Infantile Mortality.**

Eighty-five deaths of infants under one year of age have to be recorded as belonging to the Borough; of these one occurred in Westminster Hospital and three in the Rochford Union Workhouse, but being residents in the Borough have to be included. The infantile mortality rate, *i.e.*, number of deaths of infants under one year per 1,000 births registered during the year is consequently 74.62, which is by far the lowest ever recorded, as will be seen from the following table.

| Year | Population | No, of births | No. of deaths of infants under 1 year | Infantile mortality rate |
|---|---|---|---|---|
| 1899 | 24,710 | 657 | 121 | 184·17 |
| 1900 | 27,721 | 739 | 135 | 182·40 |
| 1901 | 29,793 | 781 | 140 | 179·25 |
| 1902 | 33,537 | 839 | 84 | 100·11 |
| 1903 | 37,283 | 935 | 111 | 118·71 |
| 1904 | 41,944 | 1,007 | 180 | 178·74 |
| 1905 | 46,380 | 1,060 | 126 | 118·86 |
| 1906 | 50,302 | 1,095 | 154 | 140·64 |
| 1907 | 53,283 | 1,042 | 98 | 94·05 |
| 1908 | 57,399 | 1,098 | 101 | 91·98 |
| **1909** | **61,268** | **1,139** | **85** | **74·62** |

The lowness of the infantile mortality rate as was the case in the two previous years was almost entirely due to the non-occurrence of summer-diarrhœa, as will be seen from the following table which gives the principal causes of infantile deaths during the last 5 years.

| | 1909 | 1908 | 1907 | 1906 | 1905 |
|---|---|---|---|---|---|
| Common Infectious Diseases— | | | | | |
| Measles ... ... ... ... | 2 | — | 1 | 1 | 1 |
| Whooping cough ... ... | 4 | 2 | 9 | 2 | 6 |
| Diarrhœal Diseases— | | | | | |
| Diarrhœa ... ... ... ... | 3 | 19 | 6 | 61 | 21 |
| Enteritis ... ... ... ... | 5 | 3 | — | 4 | 3 |
| Gastro-enteritis ... ... ... | — | 3 | 3 | 5 | 8 |
| Premature births ... ... ... ... | 18 | 18 | 13 | 24 | 18 |
| Congenital defects .. ... .. | 9 | 7 | 4 | 4 | 4 |
| Marasmus ... ... ... .. ... | 7 | 11 | 14 | 13 | 21 |
| Tuberculous diseases ... ... | 3 | 4 | 6 | 9 | 8 |
| Convulsions ... ... ... ... | 4 | 11 | 11 | 5 | 16 |
| Bronchitis ... ... ... ... ... | 6 | 8 | 9 | 5 | 10 |
| Pneumonia ... ... ... .. ... | 10 | 4 | 10 | 7 | 4 |
| Other causes ... ... ... | 14 | 11 | 12 | 14 | 6 |

The causes of 77 deaths were certified by a medical practitioner; in 4 cases inquests were held, the verdicts being respectively :—

| Age of Child. | Cause of death. |
|---|---|
| Newly born .. | Suffocation of doubtful causation |
| Two months ... | Suffocation through overlying |
| Newly born ... .. | Suffocation from want of attention at birth |
| Seven weeks ... | Starvation and neglect. Manslaughter |

In four cases, the cause of death was uncertified, the Registrar entering as shown below the supposed cause upon the statement of the friends.

| Age. | Supposed Cause of Death. |
|---|---|
| Thirty days | Congenital debility and convulsions |
| Five hours | Premature birth and exhaustion |
| Eleven months | Tabes Mesenterica |
| Seventeen days | Congenital debility and fits |

As in previous years enquiries at the homes were made in all infantile deaths that occurred during the year.

Of the 85 infants who died, 14 or nearly one sixth of the total lived less than 24 hours, 22 or rather more than a quarter of the total less than a week, and 37 or nearly half of the total less than a month. 52 died in the first three months of life, 12 in the second, 10 in the third, and 11 in the fourth three months.

Nine of the deaths were of illegitimate infants, which gives an infantile mortality rate of 243 per 1,000 as compared with 69 per 1,000 among legitimate infants. The deaths of the illegitimate infants were attributed to premature birth in two cases, diarrhœa and enteritis two cases, bronchitis and broncho pneumonia three cases, osteomyelitis one case, and accidental suffocation in bed one case. Only one of the nine children was breast fed.

Seventeen of the infants were insured, being 35 per cent. of the children who lived for more than a month.

Particulars of the registered causes of deaths are given in Table V. at the end of the report and from this it will be seen that ante-natal causes leading to premature birth, congenital defects, etc., account for at least one third of the deaths. Very little can be done to prevent this waste of infant life as the factors in the causation are probably very complex and but little known. Of the so-called preventible deaths, measles caused two deaths, whooping cough four, diarrhœal diseases eight, marasmus seven, tuberculosis three, congenital syphilis two, and lung troubles 16.

Of 76 cases of which particulars are available, 16 were breast fed from birth, 32 were for a short period breast fed, but at time of the onset of the fatal illness were being fed by bottle, four had had cows milk alone, and two condensed milk only, while 22 died within so short a time of birth that they were not fed. There is little doubt that mothers are realizing the advisability of adopting the breast-feeding of the infants and it is apparent that when unable from any cause to suckle their infants they resort to the boat bottle in preference to the old unhygienic long-tube bottle. Of the 34 infants who were being fed by bottle, the boat variety was being used in no less than 29. When visiting the homes of children in the poorer neighbourhoods one occasionally finds that the long tube bottle is in use and the excuse offered is always that it is more convenient than the boat variety which has to be held while the baby is being fed. In only three cases were patent foods being given to the infants and speaking generally there was much less evidence than in former years that the feeding had been improper.

Pamphlets issued from the Health Department dealing with the feeding and care of infants are handed by the Registrar to the parents at the time of the registration of birth and these are doubtless of service in the instruction of parents.

The School nurse who spends a great part of her time in visiting the homes of school children carries out necessarily many of the duties of a Health Visitor, and when visiting a house does not confine her attention to the children of school age; if she finds that the younger children of the family are improperly fed or unsuitably clothed or are in need of medical or nursing attendance she advises the parents accordingly; if the house is dirty or any insanitary condition is present, the Sanitary Inspector is instructed to visit and deals with the matter. In reports of previous years the appointment of a Health Visitor has been recommended mainly on account of the very high infantile mortality then existing, and judging from the good results which have followed the appointment of a School nurse in March last I am confident that her influence for good in the direction of educating parents in the proper management and hygiene of infants will have a marked effect upon the mortality rates of future years.

The Notification of Births Act which has been found to be of great service in many towns has not been adopted in the Borough where the necessity for it is not so great as in many industrial cities.

## Deaths from Zymotic Diseases.

To the seven principal zymotic diseases, viz. : Small-pox, scarlet fever, diphtheria, typhoid fever, measles, whooping cough and diarrhœa, 32 deaths were attributed giving a zymotic death rate of .52 the lowest ever recorded as will be seen from the subjoined table.

| Year. | Population. | Deaths from the Seven Principal Zymotic Diseases. | Zymctic Death Rate per 1,000 Population. |
|---|---|---|---|
| 1899 | 24710 | 34 | 1·45 |
| 1900 | 27721 | 31 | 1·14 |
| 1901 | 29793 | 93 | 3·05 |
| 1902 | 33537 | 61 | 1·91 |
| 1903 | 37283 | 39 | ·81 |
| 1904 | 41944 | 96 | 2·24 |
| 1905 | 46380 | 57 | 1,25 |
| 1906 | 50302 | 87 | 1·73 |
| 1907 | 53283 | 48 | ·80 |
| 1908 | 57399 | 38 | ·66 |
| 1909 | 61268 | 32 | ·52 |

The low rate in 1909, as was the case in the two previous years, was due to the comparatively small mortality from summer diarrhœa. Scarlet fever caused three deaths, diphtheria four, measles nine, whooping cough eleven, and diarrhœa five. No cases of small-pox were reported and no deaths were, for the first time in the history of the town as far as our records go, attributed to typhoid fever.

## Deaths from Cancer.

Thirty-eight deaths of residents in the Borough were registered as having been due to malignant disease in one of its various forms, 14 being of men, and 24 of women; the death rate calculated on a population of 61,268 is consequently .62 per 1,000. The following table shows the number of deaths and the death rate for cancer in previous years.

| Year. | Estimated Population. | Total Deaths. | Deaths per 1,000 Population |
|---|---|---|---|
| 1899 | 24710 | 16 | ·64 |
| 1900 | 27721 | 17 | ·61 |
| 1901 | 29793 | 22 | ·73 |
| 1902 | 33537 | 32 | ·92 |
| 1903 | 37283 | 27 | ·72 |
| 1904 | 41944 | 30 | ·71 |
| 1905 | 46380 | 41 | ·97 |
| 1906 | 50302 | 47 | ·93 |
| 1907 | 53283 | 51 | ·94 |
| 1908 | 57399 | 32 | ·56 |
| 1909 | 61268 | 38 | ·62 |

The ages of the youngest and oldest persons who died from cancer during the year were 31 and 75 respectively; three deaths took place between the ages of 30 and 40, four between 40 and 50, 11 between 50 and 60, 13 between 60 and 70, and seven between 70 and 80.

One death resulted from retroperitoneal sarcoma, while the remaining 37 deaths were attributed to carcinoma in its various forms, the organs affected being the breast in four cases, the stomach in six, the liver in three, the bowels in nine, the uterus in three, the bladder in one, the œsophagus in two, and the mouth, the brain, the prostate, the kidney, the cervical glands, the face, the abdomen in one each respectively.

Enquiries as to residence, length of illness, family history in relation to cancer, etc., are made in every case and particulars have been obtained as regards 35 of the 38 patients. Six of the patients arrived in the Borough ill, having come to reside in the

Borough with the hope of prolonging life; four of these died within three months of their arrival while in the remaining cases deaths did not ensue for two years and three years respectively. In only one instance was there a history of a previous case of cancer having occurred in the house occupied by the patient. In four cases there was a family history of cancer, a father having died from the disease in two instances, a brother in one, and two cousins and a mother in the remaining instance. One of the deceased is said to have nursed some five years previously a patient suffering from cancer.

Disinfection is offered in all cases of deaths from cancer and was carried out in ten instances. Whether this serves any useful purpose is somewhat doubtful in the present state of medical knowledge as regards the causation of the disease, but in any case the error is on the side of safety and the disinfection of the rooms, bedding, etc., certainly gives some feeling of security to the other residents in the house.

# THE INFECTIOUS DISEASES.

# THE NOTIFIABLE INFECTIOUS DISEASES.

Two hundred and ninety-one notifications of the compulsorily notifiable diseases were received during the year; of these 190 were of scarlet fever, 77 of diphtheria, one of membraneous croup, three of typhoid fever, one of puerperal fever and 19 of erysipelas.

Seven of the scarlet fever, two of the diphtheria, and one of the typhoid fever notifications, as also the notification of membranous croup, were subsequently withdrawn by the medical practitioners notifying, the subsequent course of the illness not confirming the original diagnosis. One of the patients notified to have diphtheria was found upon removal to the isolation hospital to be suffering from scarlet fever and not from diphtheria. One of the scarlet fever patients was notified by two medical practitioners.

No notification of the voluntarily notifiable disease "Phthisis" was received during the year.

One fatal case of puerperal fever escaped notification, the diagnosis not being made until a post-mortem examination ordered by the Coroner revealed the cause of death.

The figures thus corrected are given in the following table which shows the number of cases of each disease that occurred in the different months of the year. As will be seen, the smallest number of notifications was received during July in spite of the fact that during the visit of the Fleet, in that month, the Borough was invaded by many tens of thousands of visitors; the majority of the latter were however adults, none of whom developed any notifiable disease during their stay.

The increase of notifications, more particularly of Diphtheria, in August was coincident with the arrival in the Borough of large numbers of children upon the breaking up of the schools for the summer vacation, seven of the 14 scarlet fever cases, and 10 of the 12 diphtheria cases notified, being all attributable to children arriving in the Borough in an infectious condition.

## NOTIFIABLE DISEASES.

| | Scarlet Fever. | Diphtheria & Membranous Croup. | Typhoid Fever. | Erysipelas | Puerperal Fever. | Total Cases. |
|---|---|---|---|---|---|---|
| January .. | 19 | 2 | — | 1 | — | 22 |
| February .. | $12+1_w$ | 4 | — | 2 | — | $18\ (+1_w)$ |
| March ... | $38+1_b$ | $(1_w$ | $(1_w)$ | 2 | — | $40\ (+2_w)$ |
| April ... | $21+2_w$ | $8+1_w$ | 1 | 3 | — | $33\ (+3_w)$ |
| May ... | $18-1_a$ | $2+1_a$ | — | 1 | — | 21 |
| June ... | 19 | 2 | — | — | — | 21 |
| July ... | 7 | $2+1_w$ | 1 | 3 | 1 | $14\ (+1_w)$ |
| August ... | 14 | 12 | — | — | — | 26 |
| September | $13+3_w$ | 8 | — | 2 | — | $23\ (+3_w)$ |
| October .. | 10 | 19 | — | 1 | — | 30 |
| November ... | $7+1_w$ | 9 | — | 2 | — | $18\ (+1_w)$ |
| December ... | 5 | 6 | — | 2 | — | 13 |
| Total No. of notifications | 190 | 78 | 3 | 19 | 1 | 291 |
| Corrections | $-7_w-1_b+1_a$ | $-3_w-1_a$ | $-1_w$ | — | — | $-11_w-1_b$ |
| Total No. of cases | 183 | 74 | 2 | 19 | 1 | 279 |

w—Subsequently withdrawn by notifying doctor.

a—Notified as diphtheria, but found to be suffering from scarlet fever.

b—Notified by two doctors

## Tuberculosis.

Ninety-nine deaths of residents from tuberculosis in its various forms have been registered during the year; of these 74 died from tuberculosis of the lungs (phthisis), the disease in the remaining cases being diffuse in two, affecting the membranes of the brain (meningitis) in fifteen, the peritoneum and mesenteric glands in six, and the spine and the mediastinal glands in one case each respectively.

Of the 74 deaths from phthisis six occurred in the Workhouse Infirmary at Rochford, the patients having been admitted to the institution in the later stages of the disease.

The number of deaths each year during the last eleven years and the number of deaths per 1,000 inhabitants are shown in the following table:

TUBERCULOSIS.

| Year | Estimated Population | Deaths from Phthisis | Deaths from other forms of Tuberculosis | Total deaths from all forms of Tuberculosis | Deaths from Phthisis per 1000 Population | Deaths from all forms of Tuberculosis per 1000 Population |
|---|---|---|---|---|---|---|
| 1899 | 24710 | 32 | ? | ? | 1·29 | ? |
| 1900 | 27721 | 21 | 13 | 34 | ·75 | 1·22 |
| 1901 | 29793 | 32 | 24 | 56 | 1·07 | 1·71 |
| 1902 | 33537 | 30 | 16 | 46 | ·89 | 1·37 |
| 1903 | 37283 | 33 | 16 | 49 | ·88 | 1·31 |
| 1904 | 41944 | 50 | 21 | 71 | 1·19 | 1·69 |
| 1905 | 46380 | 52 | 24 | 76 | 1·12 | 1·63 |
| 1906 | 50302 | 50 | 29 | 79 | ·99 | 1.57 |
| 1907 | 53283 | 63 | 25 | 88 | 1·18 | 1·65 |
| 1908 | 57399 | 61 | 14 | 75 | 1·06 | 1·30 |
| 1909 | 61268 | 74 | 25 | 99 | 1·20 | 1.61 |

**Imported Cases.**—Careful enquiries are made into the history of the illness of each person who dies in the Borough from tuberculosis, and particulars have been obtained as regards 64 of the 74 patients who died from phthisis and of 21 of the 25 deaths from other forms of tuberculosis. Of the 64 patients who died from phthisis no fewer than 45, *i.e.*, 70 per cent., had developed the disease before they came to reside or stay in the Borough, to which they had been attracted in the hope of prolonging life, 25 living however less than one year after their arrival in the town, 21 less than six months, eleven less than two months, eight less than one month, and two less than a fortnight. Moreover of the 19 so-called residents who died from phthisis, nine had resided in the Borough for less than five years and two of these had before their arrival tuberculous glands, and had thus already become infected with the disease. As regards death from other forms of tuberculosis, five of the 25 deaths were of persons who suffered from the disease before they came to reside in the town. Hence it is safe to assume that of the 99 deaths from all forms of tuberculosis during the year, the disease in at least 52 or more than half the total number was definitely "imported." The true death rate among the residents is therefore for phthisis .44 per 1,000 population, and for all forms of tuberculosis .76 per 1,000, as compared with 1.11 and 1.58 respectively for the country generally in 1908.

Recent researches into the aetiology of tuberculosis appear to show that heredity is perhaps the most important factor in the causation of the disease and hence it is of interest to note that in only 14 of the 64 cases of phthisis was there a history of the disease in other members of the family. In one instance, the father two brothers and a sister all succumbed to the disease, and here heredity definitely did appear to play a part; possibly, however, the unhygienic surroundings which led to the first member of the family being attacked may have tended also to increased susceptibility in the other members, while, unless the precautions taken to prevent spread of infection were scrupulously observed from the onset of the illness, the constant contact of the different members of the family with the invalid would tend to increase their chances of being infected.

**Precautions Taken by Patients.**—Of the 64 patients of whom particulars are available ten shared a bedroom with, and in nearly all cases occupied the same bed as, presumably healthy persons; only two of these patients were provided with expectoration flasks, and in none were any other precautions against the spread of infection being adopted; it is noteworthy that none of the ten patients had been in sanatoria or hospitals for consumption where they would be taught the necessity of safeguarding the health of the persons with whom they reside. Of the 54 persons who occupied a separate bedroom, no particulars of the precautions adopted could be obtained as regards two, there was no expectoration in three, suitable expectoration flasks were in use by 33, and in the remaining cases rags, chambers, &c., were the only receptacles for the sputum, and no great care was being taken as regards precautions. In nearly every case where suitable flasks were being used, the expectoration was being disinfected or burnt and the other precautions taken were adequate to prevent the spread of infection, and 18 of the deceased had at some period of their illness been inmates of a sanatorium.

**Voluntary Notification.**—Pulmonary tuberculosis with expectoration containing tubercle bacilli was made a voluntarily notifiable disease in the Borough in October, 1905, a fee of 2s. 6d. being allowed for each notification, provided the patient was not moribund.

The number of such notifications has, however, always been small in proportion to the number of deaths from phthisis, as will be seen from the table below, and this year none have been received.

| | Deaths from Phthisis. | Notifications Received. |
|---|---|---|
| 1905 | 52 | 13 |
| 1906 | 50 | 8 |
| 1907 | 63 | 8 |
| 1908 | 61 | 6 |
| 1909 | 74 | Nil |

Voluntary notification, apart altogether from the inconsiderable number of cases which become by its means known to the Sanitary Authority, must necessarily be regarded as a failure, as of the 22 cases which have been notified during the last four years the great majority were patients who, having acquired the requisite knowledge by residence in a sanatorium, were already taking precautions to prevent the spread of infection; they were moreover persons of the better class who owing to ill-health had given up business and had come to reside in the Borough where they were leading invalid lives. None of the patients were in the early stages of the disease and very few belonged to the working classes. The omission to notify has probably not been due to any unwillingness on the part of the public or of the medical profession to assist the Sanitary Authority, but from the feeling that, as long as there were no means of isolating even the worst of the patients or of giving them any other practical assistance, little good would result from notification.

Thanks to the courtesy of my medical colleagues in the Borough, I learn that of 90 patients who are under their care with phthisis at the present time, no fewer than 72 (or 80 per cent.) had contracted the disease before arrival in the Borough; of the remaining 18 cases in whom the disease has apparently developed since they have taken up their residence in the town, five have probably been infected by one or other of their relatives living in the same house but in whom the disease was "imported." It is probable, as will be seen later that many cases of phthisis occurring among the poor do not come under regular medical treatment until the later stages of the disease, but it is satisfactory to find that in only 13 of the 90 persons in the Borough known to be suffering from phthisis at the present time can infection be said not to have been imported, thus confirming the deduction which has been drawn above from the history of the fatal cases that in the great majority of instances the disease has not been contracted in the Borough.

The fact that these imported cases have in some instances infected other residents in the same house shows, however, the need for the taking of precautions if the residents of the Borough are to continue that relative immunity from the disease which has apparently characterised the town in recent years.

Excluding instances where the cervical glands are alone infected there are at the present time under treatment by the local doctors 35 cases of tuberculosis not affecting the lungs but involving joints, bones, &c.; in 22 instances the disease was already present when the patients came to reside in the Borough, but in 13 there is every reason to believe that the disease was contracted here; the proportion of cases in which the affection has been acquired in the Borough is consequently higher than when the lung is affected, and this cannot be regarded as quite so satisfactory, although doubtless due to the fact that the majority of the patients are young children whose parents have come to reside in the Borough owing to there being a hereditary tendency in their families to tuberculosis.

**Disinfection.**—Whenever a death takes place from tuberculosis of the lungs or a phthisical patient has removed from one address to another, the room occupied by him, together with the carpets, bedding, &c., is disinfected; 70 houses where deaths took place were thus dealt with during the year, as also 34 houses which had been occupied by phthisical patients.

**Diagnosis of Early Cases.**—It is universally recognised that it is all important for efficient treatment that the disease should be recognised in its early stages, and the provision made by the Council for the free bacteriological examination of specimens of sputum at the Borough Laboratory is largely made use of by the Medical Practitioners of the town, as will be seen from the table showing the work carried out at the Laboratory.

**Poor Law Patients.**—Under the Public Health (Tuberculosis) Regulations, 1908, which came into force on 1st January, 39 notices referring to 24 patients have been received; 19 were notifications by the District Medical Officer that "poor persons" upon whom he was in attendance were suffering from phthisis, 14 were from the Medical Officer of Rochford Poor Law Infirmary that phthisical patients were under treatment in or had been admitted into that institution, and six were from the Master of the Workhouse intimating that phthisical patients had left the Infirmary for residence in the Borough.

The after history of the 24 patients up to the end of the year is as follows:—Twelve have died, two are in the Workhouse Infirmary at present, nine are at home, and one has not been traced since she left the Workhouse. Of the twelve patients who died, six succumbed at the Workhouse Infirmary, the other six at home. Excluding the five patients who were notified on 1st January, when the regulations came into force, and who consequently may have been under treatment by the Poor Law Medical Officers for some period antecedent to this, the time which elapsed between the patients first coming under the observation of the Guardians' Medical Officer and their death was as follows, 25 days, 102 days, 4 days, 2 days, 10 days, 17 days, and 116 days respectively. From this it will be seen that the great majority of patients suffering from phthisis only apply to the Poor Law Authority in the very last stages of the disease when all hope of amelioration in their condition has to be abandoned.

In addition to disinfection after death or on removal, other precautions are adopted to prevent the spread of infection. Phthisical patients remaining at home are visited from time to time to ensure that precautions are being observed, and in four cases expectoration flasks have been lent those that were unable to procure them otherwise. Leaflets describing in popular language the care necessary to safeguard the health of other inmates in the house are handed to the patients, and every effort is made to impress upon the latter the principles of the mode of life most conducive to their recovery. In a few cases where patients have ceased to be under the care of the Poor Law Authority and have refused to resort to the latter for further assistance, steps have been taken through philanthropic agencies to assist them to obtain better nourishment, &c., and it is in this direction that help is often most required and most beneficial.

**General Remarks.**—Although, as is shown above, the incidence of phthisis upon the inhabitants is decidedly below rather than above that of the country generally, the large influx of phthisical patients from London and other places into the town makes it necessary that the Sanitary Authority should see that every step possible is being taken to prevent any spread of infection. It would be advisable to adopt byelaws rendering spitting on pavements and in other public places an offence, and notices to this effect should be displayed in the trams, public lavatories, &c.; at times during the summer months the condition of the floor of some of the public shelters and seats and of the pavement adjoining is most disgusting owing to indiscriminate expectoration, and their thorough cleansing each night during the busy season would be eminently desirable. Boarding house keepers, lodging house keepers, &c., should realise that in the interests of the public health it is necesary that rooms occupied by a visitor suffering from phthisis should be disinfected before being re-let after the patient has ceased to occupy them. At present we occasionally come across a landlady who objects to the disinfection being carried out giving as the reason the fear of alarming the other guests, or that the presence of the trucks, &c., outside the house will cause the public to imagine that there has been a case of scarlet fever or other zymotic disease in the house. The difficulty in these cases is easily met, and it is unreasonable that any objection should be raised on this score.

The position of the phthisical patient who is dependent upon his earnings for a living is at the present time deplorable, and, having in view the large sums of money which are spent annually in preventing the spread of scarlet fever, diphtheria, typhoid fever, &c., which in comparison cause extremely few deaths, I cannot help thinking that not sufficient attention is bestowed by the Sanitary Authorities in the country generally on tuberculosis, which is admitted to be a disease eminently preventible by sanitary and hygienic measures. The sequence of events in this Borough appears frequently to be as follows:—A man possibly in the prime of life develops phthisis, and there being no sanatorium available to which he can be sent at a time when alone the disease is curable, he continues at work, being treated at intervals by his family doctor. As the disease advances and his capacity for work diminishes, his earnings cease to be sufficient to keep the home intact, with the result that he leaves his house and with his family resides in perhaps two or three rooms. After a time as his poverty increases he can no longer afford to have sufficient food, not alone medical attendance, and to assist in maintaining the family his wife has to go out to work instead of being enabled to stay at home to nurse him. As a result, when probably most infectious, he is brought into intimate contact with the other members of his family, many of them children, all possibly sleeping in the same room and rendered unduly susceptible to the disease in consequence of the insufficient nourishment resulting from the ensuing poverty. Finally in some cases as the end approaches and the need for medical attendance appears to the friends to become urgent, the Poor Law Authority is applied to, though this resource is only adopted when all other means have failed.

In many of the American States the position of the person who is so unfortunate as to develop phthisis is much more enviable. In the early stages of the disease a Sanatorium maintained by the Local Authority is available if it is thought there is any likelihood of cure; when sufficiently recovered he can return to work and, in the event of any slight breakdown in health not sufficiently serious possibly to necessitate a further period of stay in a Sanatorium, he may resort to Tuberculosis Dispensaries established in connection with the Health Department where he receives all necessary treatment. Patients in the last stages of the disease not likely to derive benefit from a stay in a Sanatorium are visited at their homes as often as is necessary by nurses and doctors in connection with the Tuberculosis Dispensaries, but in the event of there being any conditions which would tend to spread the infection such as overcrowding, want of proper precautions, &c., the patient can be compulsorily removed to an institution maintained for the purpose. These measures of combating the disease have been eminently successful, the incidence of the disease having markedly decreased in recent years.

Public opinion in this country is not quite ripe enough for all the above measures to be adopted here, and so long as it is not regarded as a State question very little advance will be made. It is unreasonable to expect a Local Authority to spend large sums of money in treating and isolating cases of phthisis, the majority of whom come into the district on account of the reputation which the town has acquired as a place of residence for tuberculous patients, and it is clear that if any of the measures adopted in America were attempted by the Council the influx of such patients into the Borough would be enormously increased. No town or county can without State aid make a real attempt to grapple with the question which in spite of the reduction of the death rate in recent years is still one of the most pressing public health and social problems of to-day.

A Committee of the Rochford Board of Guardians has been considering the question of the best method of dealing with their phthisis patients, of whom they estimate there are within their area about 40 cases all either in the receipt of Poor Law relief, or at any rate in very humble circumstances. I might remark that some of the 74 persons who died last year from phthisis in the Borough had become reduced to extreme poverty, and, were it not for their horror of being considered paupers, would have been eminently suitable subjects for relief at the hands of a public authority. As a result of their deliberations I understand the Committee recommend that until cases of tuberculosis can be handed over to the Sanitary Authority or Health Authority for treatment, special arrangements should be made for their being nursed and treated in their own homes and failing this that they should be removed to Sanatoria or Hospitals, to be precise, that " where home treatment is impracticable, relief in any case of tuberculosis be in future given only upon condition that the patient is willing to go at the cost of the rates to some suitable institution for treatment." The object in view is obviously that the patient should be treated and nursed at home if possible, and that under no circumstances is he to be admitted to the Poor Law Infirmary.

The practicability of home treatment in any individual case may obviously be looked upon from two very different points of view by a Poor Law Authority and a Sanitary Authority respectively, and I am of opinion that the resolution as it stands is not an advance, when looked upon solely from the point of view of public health. It has to be remembered that under present circumstances phthisical patients do not in general resort to the Poor Law Authority until they are in the later stages of the disease, by which time they and their families are often practically destitute and living in two or three rooms; as an officer of the Sanitary Authority it has frequently been my duty in an effort to safeguard the health of the other inmates of a house to endeavour to persuade sufferers from the disease in its advanced stages to enter the Infirmary to which apparently they will in future be refused admission. Such cases would not be admitted to any general or chest hospital nor are they suitable patients for a Sanatorium. It would be quite hopeless to expect them or their relatives to consent to their being sent away to any institution unless the latter was so easily accessible that they can be visited frequently; in fact, the great objection offered by our phthisical patients to being admitted to Rochford Infirmary at present is the distance of the institution from the Borough, and I can foresee that if the Guardians adopt the suggestions of the Committee very few patients with phthisis who come under their care will elect to leave their homes, with the result that from a public health point of view conditions will not be improved. As regards patients in the early stages of the disease it cannot be maintained that treatment in the home can possibly be so efficacious as that at a Sanatorium or other institution specially adapted for the treatment of phthisis; if this is true of the better classes, as is shown by the fact that patients to whom expense is no object are almost invariably sent to such open-air institutions, it must be at least equally so when applied to the homes of the poor, especially when as is often the case the breadwinner is the patient. Moreover, although every medical man nowadays impresses upon his patients the necessity of carrying out precautionary measures to prevent the spread of infection to the other inmates of a house, enquiries show that almost the only patients who do this intelligently have spent some period of their illness in a Sanatorium. The adoption of the Committee's suggestion would certainly prevent any likelihood of cases of phthisis coming under observation in the early stages, and this should be the object aimed at.

A much better solution to the difficulty would from the public health point of view be for the Guardians to send to Sanatoria any patients who being in the incipient stages of the disease are consequently likely to receive permanent benefit. Possibly if this course was adopted, and the treatment of phthisis freed as far as possible from the so-called " pauper taint " many more cases of tuberculosis would apply for treatment in the early and still curable stages, so that a great saving of life and in the long run of public money would result. The present system, as a result of which Poor Law relief is not applied for until the course of the illness has so far advanced as to make an early fatal issue inevitable and has rendered possibly a whole family destitute and chargeable to the rates, is obviously faulty.

For the advanced and hopeless cases of the disease, special accommodation of the " hospital " rather than of the " Poor Law" type, with increased privileges and a dietary to which no exception could be taken, should be provided in the Infirmary, and every inducement should be offered to ensure these patients stopping within the building until released by death.

## Smallpox.

No case of smallpox occurred during the year though upon three occasions I have been asked by medical practitioners to see patients who had developed rashes simulating that of this disease. As was pointed out in last year's report the number of unvaccinated persons in the Borough is largely on the increase as a result of parents taking advantage of the greater facilities now open to them for obtaining exemption from vaccination for their children upon making a statutory declaration before a magistrate. The experience of past years as regards the cyclical prevalence of smallpox justifies the belief that the disease will shortly again become prevalent in the Metropolis, and, with Southend in such close communication with London, the Borough can hardly be expected to escape. Having in mind the great increase in the population since the last visitation of smallpox and the present unsatisfactory condition of the inhabitants as regards protection by vaccination, it is safe to assert that an outbreak of smallpox in the town would be on a much larger scale than on previous occasions, and would not only be a serious menace to the reputation of the Borough, but would also entail very considerable expense in providing the additional means of isolation which would be necessary.

## Scarlet Fever.

During the year 190 notifications of this disease were received, but of these seven were subsequently withdrawn by the medical practitioners notifying, the revised diagnosis being erythema pernio, septic cellulitis, influenza, measles, tonsillitis (two cases) and drug rash respectively; one case was notified by two doctors, and one case notified as diphtheria was found subsequently to be suffering from scarlet fever only. Hence the total number of cases of scarlet fever which came under observation was 183 which gives an incidence rate per 1,000 inhabitants of 2.98 as compared with 2.96 last year, 3.15 in 1907 and 3.77 in 1906.

SCARLET FEVER.

| Year. | Estimated Population. | Cases Notified. | Case rate per 1,000 Population | Deaths | Deaths per 1,000 Population. | Deaths per 100 Cases |
|---|---|---|---|---|---|---|
| 1899 | 24710 | 150 | 6·07 | 1 | ·04 | ·66 |
| 1900 | 27721 | 142 | 5·12 | 2 | 0·07 | 1·41 |
| 1901 | 29793 | 99 | 3·32 | 2 | ·06 | ·99 |
| 1902 | 33537 | 109 | 3·25 | — | ·00 | ·00 |
| 1903 | 37283 | 73 | 1·95 | 3 | ·08 | 4·19 |
| 1904 | 41944 | 50 | 1·19 | — | ·00 | ·00 |
| 1905 | 46380 | 87 | 1 87 | — | ·00 | ·00 |
| 1906 | 50302 | 190 | 3·77 | 3 | 06 | 1·57 |
| 1907 | 53283 | 168 | 3·15 | 1 | ·02 | ·59 |
| 1908 | 57399 | 170 | 2·96 | — | ·00 | ·00 |
| 1909 | 61268 | 184 | 2·98 | 3 | ·04 | 1·6 |

**Mode of Infection.**—Careful enquiry was made in each case into the mode of infection, but in no fewer than 75 instances, *i.e.*, 41 per cent., it was impossible to trace any connection with any known case of the disease; this is not surprising, seeing that many of the patients suffered from extremely mild attacks and only came under observation during the second or third week of the disease when the occurrence of other cases in the family or the appearance of peeling raised the parent's suspicions as to the nature of a slight illness some time previously. In the interval these patients, after recovering from the trivial malaise, mixed freely with the public, and in some cases made railway journeys, went to school treats, etc., and it is doubtless due to these circumstances that in such a large proportion of instances the actual cause of infection could not be traced. In 84 instances the infection could be clearly assigned to a known case of the disease, and it is noteworthy that 28 of these were discovered by the Health Officials as the result of enquiries into notified cases, which fact clearly shows the utility of following up possible contacts of every case which comes under observation. In 21 instances the infection was definitely known to have been imported, and three other patients were infected by one or other of these imported cases; eleven of the patients arrived in the Borough ill, four being removed to hospital within a few hours of their arrival, while three became ill on the day following their arrival. In addition to the 21 cases which from the date of onset of the initial symptoms or other circumstances could be definitely traced to being imported, seven visitors were notified to have the disease, and in some of these instances it seemed probable that they had been infected before arrival in this Borough.

**Number of Houses Invaded.**—One hundred and thirty-two houses were invaded by the disease during the year, the number of cases which occurred in the houses being shown in the subjoined table:—

| No. of patients attacked in house. | No. of houses | Total No. of patients. |
|---|---|---|
| 1 | 105 | 105 |
| 2 | 13 | 26 |
| 3 | 7 | 21 |
| 4 | 4 | 16 |
| 5 | 3 | 15 |
|  | 132 | 183 |

**Precautions Taken.**—Upon the receipt of a notification of a case of scarlet fever the house is at once visited, and steps taken for the removal of the patient to the Sanatorium when efficient home isolation is impossible. Careful enquiries are made as to the probable mode of infection, and all contacts are examined with a view to the detection of unrecognised cases; the importance of this latter precaution is seen from the fact above noted that 28 of the cases notified during the year were detected by the Health Officials as the result of their enquiries. A sanitary inspection is made of the premises, and in due course the drains are tested. Notices are sent to the day schools and to the Sunday schools attended by the contacts advising exclusion for the usual quarantine period.

**Method of Isolation.**—156 of the 183 patients who developed scarlet fever during the year were removed to the Borough Sanatorium for isolation and treatment, the remaining 27 patients being nursed at home. Every case which occurred in a boarding house, or dairy premises, or in a business house was removed to hospital. With two exceptions, home isolation was only permitted when either there were no other children in the house, or all the children were already attacked by the disease; in every instance where the patient was treated at home, a separate room with separate attendance was insisted upon, and frequent visits were made to ensure that all precautions were being taken to prevent the spread of infection.

**Mortality.**—Three fatal cases occurred during the year, all being children under five. The percentage case mortality is consequently 1.64, while the zymotic death rate from the disease is .048. Two of the patients died in the Borough Sanatorium, and one died at home. The three patients suffered from severe septic attacks, but one of the two patients who died in the Borough Sanatorium was practically convalescent from the attack of scarlet fever when she succumbed to an attack of acute tuberculosis which an autopsy showed had become generalised from a caseous abdominal gland, the result of long standing disease.

**Details of Outbreaks.**—Only one outbreak worthy of the name occurred during the year, and this, though small as measured by the number of persons infected and localised to a small area of the Borough, caused considerable anxiety during the early part of March. On March 1st two notifications of scarlet fever were received and upon enquiry I learnt that each of the children attended the Non-provided Elementary School at Prittlewell in the northern portion of the Borough. Enquiries at the homes failed to reveal any source of infection, so a visit was paid to the schools and all the children in attendance were examined, without, however, any suspicious case being discovered. The number of absentees was unusually large owing to a severe snowstorm and a list having been obtained from the Head Teacher, each was visited, with the result that within the next two days 19 definite cases of scarlet fever were detected and removed to Hospital. One of the patients had already been ill nine days at the time of detection, but the onset in the majority of the other cases was five or six days previously. The first patient's rash was diagnosed by a neighbour to be measles with the result that when similar rashes developed in children living in the same street, the latter were thought to be suffering from the same disease so that medical advice was not sought except in two instances. The fact that 19 children living in a very limited area were simultaneously attacked by scarlet fever suggested the possibility that the outbreak might be due to milk infection; careful enquiry into the milk supply of each of the houses failed to reveal any common source of supply either retail or wholesale; 10 of the 19 cases first detected occurred in houses in one short street, and although the invaded households obtained their regular milk supply from different sources it was thought possible that the patients might have been infected by contaminated milk purchased from a milk-hawker or other casual supply, but enquiries failed to confirm this explanation. The only circumstance common to the first cases that occurred in each house was their attendance at the Prittlewell School and failing any other explanation the outbreak must be attributed to school attendance, although, it must be very rare for a child in attendance at school during the incipient stages of the disease to infect so many of his classmates. The following steps were taken to deal with the outbreak. Each house in the neighbourhood was visited, enquiries being made as to illness of children and advice given as to the boiling of milk and as to need for medical advice in the event of any illness. Any child reported to be ill was visited by the Medical Officers of the Health Department and all doubtful cases of sore throat, etc., isolated at home until absence of infection was definitely ascertained. It was impossible at first, owing to the prevalence of sorethroats and to the irregular attendance due to the severe weather, to ascertain the number of children already infected, so I deemed it necessary, as School Medical Officer, to advise that the Day School and the Sunday School attended by the patients should be closed for a period of fourteen days in order to allow time for the detection and isolation of suspicious cases. The School class rooms, needlework, books, etc., were subjected to disinfection by formalin, followed by a thorough cleansing. These steps proved efficacious, as, although twenty-nine cases occurred as a result of the outbreak, the latter soon subsided so that when the Schools re-opened all anxiety had passed away.

As showing the necessity of examining contacts in an effort to prevent the spread of infection, and as demonstrating the very prolonged infectivity of some patients, the following group of cases may be cited. A girl, R.A., was, late in January, notified to have scarlet fever, and enquiry revealed the fact that her brother, F.A., had developed a severe sore throat on January 15th, but no rash had been observed; the elder brother, C.A., had sickened on 22nd with sore throat, slight rash and vomiting, while the sister, E.A., a few days later also became ill. All four members of the "A" family at the time of examination were either desquamating suggestively or had undoubted rashes, etc., so they were in due course removed to the Isolation Hospital. Further investigation showed that Pa.S., a child of another family, had been to tea at the house occupied by the "A" family some days prior to the onset of F.A.'s illness, and upon enquiry it was learnt that Pa.S. had previously been ill with a sore throat; upon visiting her home she was found to be peeling very profusely, and from the history of the illness there was no doubt as to its true nature; this diagnosis was confirmed upon the examination of two of her sisters, B.S. and Ph.S., who were found to be developing typical attacks of scarlet fever. The three infected members of the S. family were consequently also removed to the Isolation Hospital. The doctor who had been in attendance upon the "A" family sickened with the disease within a few days of the outbreak in A's house, as also did a child of A's next door neighbour and both were isolated in the Hospital. By January 31st there were consequently in the Sanatorium no fewer than nine patients, members of four different households, all infected as the result of the missed case in the S. family, and it was hoped that all further danger had ceased. Subsequent events, however, showed that the members of the S. family were to be responsible for a further group of cases. On March 13th, Ph.S. was discharged from the Isolation Hospital quite well, and apparently free from infection, desquamation having ceased, there being no discharges, and her fauces being quite normal, except for very hypertrophied tonsils. Fifteen days later her brother, E.S., sickened with scarlet fever, and was removed to Hospital; upon examination of Ph. S. at this time it was found that her palate and faucial pilars were slightly infected, so it was advised that she should be isolated at home for fourteen days, at the end of which time her throat had resumed its normal pallor, and presented a quite natural appearance. A week later a sister, C. S., developed scarlet fever, and upon examination of Ph.S., her tonsils were again found to be much infected, and she complained of a sore throat; she was again consequently isolated at home for a further period of three weeks, *i.e.*, until May 8th. Upon June 8th a case of scarlet fever was notified from a private school, and upon enquiry I learnt that Ph. S. had entered this School as a pupil for the first time on May 27th, and that the pupil who sat next to her was the latest victim, sickening with scarlet fever on June 5th, and giving rise to three secondary cases. One other case must also be attributed to Ph. S., as her only remaining sister developed the disease on June 8th. It would therefore appear probable that a patient who sickened with scarlet fever on January 27th, and who had finished peeling and appeared in every respect well by March 13th yet remained infectious until at least the end of May, a period of nearly eighteen weeks; the periods of increased infectivity seemed to synchronize with slight attacks of sore throat which, however, quickly subsided. It is surprising that through the missing of the first case in the S. family no fewer than fifteen secondary cases are known to have been caused. Bearing this case in mind, it is not difficult to understand why the establishment of isolation hospitals has failed to stamp out scarlet fever, and it shows what an immense gain to the public health would be the discovery of the specific microbe causing scarlet fever, as at present we have no reliable method of diagnosing with certainty mild or anomalous cases, nor any means of discovering definitely when a patient is free from infection. Any money devoted from the public funds with a view to further research work in this direction would be money well invested, and in the long run would result in much economy.

## Diphtheria.

During the year 77 notifications of diphtheria and one of membranous croup were received; the latter patient proved to be suffering from measles only and repeated bacteriological examinations having shown the absence of diphtheria bacilli, the medical practitioner withdrew the notification; two of the diphtheria notifications were also withdrawn by the medical practitioners concerned, the revised diagnosis in the cases being follicular tonsilitis and quinsy respectively. One patient notified to have diphtheria was found later to be suffering from scarlet fever only. Hence the total number of cases of diphtheria which came under observation during the year was 74, which is practically the same number of cases as have occurred in each of the last six years, which is highly satisfactory, seeing that the population of the Borough has in the interval increased by 50 per cent. Calculated upon an estimated population of 61,268, the incidence rate per 1,000 population was consequently 1.20, which is the lowest rate since 1900.

### DIPHTHERIA AND CROUP.

| Year | Estimated Population | Cases Notified | Case rate per 1000 Population | Deaths | Deaths per 1000 Population | Deaths per 100 Cases |
|---|---|---|---|---|---|---|
| 1899 | 24710 | 16 | ·64 | 1 | ·04 | 6·25 |
| 1900 | 27721 | 21 | ·75 | 3 | ·10 | 14·28 |
| 1901 | 29793 | 85 | 2·85 | 12 | ·40 | 14·11 |
| 1902 | 33537 | 171 | 5·09 | 25 | ·74 | 14·61 |
| 1903 | 37283 | 57 | 1·53 | 4 | ·10 | 7·01 |
| 1904 | 41944 | 73 | 1·74 | 2 | ·04 | 2·74 |
| 1905 | 46380 | 72 | 1·55 | 4 | ·09 | 5·55 |
| 1906 | 50302 | 71 | 1·41 | 5 | ·10 | 7·04 |
| 1907 | 53283 | 71 | 1·33 | 5 | ·09 | 7.04 |
| 1908 | 57399 | 79 | 1·37 | 9 | ·15 | 11·39 |
| 1909 | 61268 | 74 | 1·20 | 4 | ·06 | 5.40 |

Of the 74 cases, four were examples of bacteriological diphtheria, that is, they presented no evidence of disease beyond the presence in their throat or nose of diphtheria bacilli; such patients may be the means of spreading the infection and as such should be isolated, but it is doubtful whether they should, properly speaking, be notified as actually suffering from diphtheria. In four patients the disease was confined to the nasal cavities and the experience of the past year has confirmed the opinion that these are the patients who are mostly responsible for the spread of the disease, more particularly in schools. Six patients suffered from combined laryngeal and faucial attacks while in the remainder the disease was of faucial type. With one exception bacteriological examinations were made of the nose and throat in each case before or immediately after notification; in three instances repeated cultures from the throat and nose failed to demonstrate the specific microbe so that in all probability the disease was probably not true diphtheria, though as the notifications were not withdrawn these cases have been included in the statistics. Many more of these cases which clinically tend to resemble true diphtheria would doubtless be notified and the public consequently put to much unnecessary annoyance, expense and anxiety were it not that the local medical practitioners make very extensive use of the facilities provided by the Corporation for the examination at the Borough Laboratory of swabs from doubtful cases.

As will be seen from the subjoined table, which gives the number of cases notified each month, the first seven months of the year were remarkably free from diphtheria; the increase in number in August, September and October was due to the importation of the disease by visitors in the former month, and by the return after the summer holidays of infectious children to school in September.

| | | | |
|---|---|---|---|
| January | 2 | July | 2 |
| February | 4 | August | 12 |
| March | 0 | September | 8 |
| April | 8 | October | 19 |
| May | 2 | November | 9 |
| June | 2 | December | 6 |

**Number of Houses Invaded.**—Sixty-three houses were invaded by the disease, as shown in the table below; of the five cases which occurred in one house (a boarding school) four developed within the course of two days, and one a week later; the three cases in another house were all detected on the same day by the

Health Officials as a result of a communication from a London Medical Officer of Health; the second case in each of the remaining five houses where multiple cases occurred was detected by the Health Officials as a result of examination of contacts following a notification of the primary case.

| No of Cases. | Houses. | Total Patients. |
|---|---|---|
| 1 | 56 | 56 |
| 2 | 5 | 10 |
| 3 | 1 | 3 |
| 5 | 1 | 5 |

**Mode of Infection.**—In five cases the infection was definitely imported, the patient arriving in the Borough ill; one of these had recently been discharged from a London Fever Hospital as convalescent from diphtheria, but shortly after her arrival in the town infected her sister, and when detected, as a result of enquiries into the origin of the infection in the latter's case, was found to be highly infectious, a profuse nasal discharge from which she was suffering teeming with diphtheria bacilli. Five cases were secondary to imported cases.

In spite of very careful enquiry and examination in 38 cases, no connection with any known case of diphtheria could be traced, which however is not surprising when it is realised that patients apparently perfectly well may yet harbour the diphtheria bacillus in their throats or noses for months after a mild and possibly unrecognised attack of diphtheria and during the whole of this time may be infectious.

**Precautions Taken.**—Upon receipt of a notification, the house is visited, arrangements made for removal of the patient to the Sanatorium if proper isolation is otherwise impossible, all contacts in the house are examined and swabs taken from their throat and nose, and enquiries made as to the probable source of infection. Notices are sent to the day schools and to the Sunday schools as to the exclusion of the patient and of contacts; if the school attended is a public elementary one, it is visited and the children in the same class examined, swabs for bacteriological examination being taken in the case of all children with nasal discharge, or who have recently had a sore throat. Prophylactic doses of antitoxin are not administered to contacts in the infected households as a routine measure; if, however, there are several children who have been badly exposed to infection, and more particularly if some are "diphtheria carriers" and cannot be efficiently isolated at home from the other members of the household, small doses of antitoxin are injected. Upon four occasions during the year it has been thought desirable to take this measure, and in no case did any of the children exposed to infection subsequently develop the disease; where the parents cannot afford to pay for the antitoxin thus used, the serum is provided by the Health Department in accordance with the resolution of the Health Committee adopted several years ago. I am confident that the small expenditure this entails is fully justified by the reduction in the number of cases of infection.

**Method of Isolation.**—Fifty-five patients were removed to the Borough Sanatorium, the remaining 19 being isolated at home. Cases occurring at boarding houses and business premises are always removed to hospital, as also are cases occurring in a house where there are other children. Of the 19 notified cases which were not admitted to the Sanatorium during the year, one was isolated at the general hospital, three were cases where the diagnosis was not confirmed by bacteriological examination, four were cases of "bacteriological" diphtheria, showing no evidence of actual illness, and with two exceptions there were no other susceptible children in the families of the remaining eleven cases. In every case where home isolation was permitted, a separate room with separate attendance was insisted on.

**Mortality.**—Four deaths were registered as having been due to diphtheria during the year, and of these one died at home on the tenth day of disease from heart paralysis, while the remaining three died at the Sanatorium, a few minutes, 36 hours and 40 hours respectively, after admission; in each of the latter cases medical advice had not been sought till the fourth day of disease, so that by the time the patients came under observation the disease had developed to such an extent that the administration of antitoxin was of no avail.

**Remarks.**—No outbreak occurred during the year, but the following account of a series of cases of which the infection could be traced to a boy suffering from unrecognised nasal diphtheria may be given. On September 20th a notification was received that an adult, A. L., had diphtheria, and it was found on examination that V. C., the son of the landlady of the house in which A. L. resided, was suffering from unrecognised nasal diphtheria, there being membrane lining each surface of the nasal septum, and a blood-stained nasal discharge, a swab from which gave almost a pure culture of diphtheria bacilli. Upon visiting the School which V. C. attended several absentees from his class were reported, three of whom proved to have diphtheria when the cause of their absence was investigated. No further cases of diphtheria being notified during the following fortnight, it was thought that the series was at an end, but on October 15th a notification was received that R. F., a boy not of school age, had contracted the disease; when this case was investigated it was found that his brother, A. F., attended the same class in School as the original cause of all the trouble, V. C., and had been absent for a few days a fortnight previously owing to sore throat and swollen glands, the swelling resulting from which the mother mistook for mumps. Unfortunately the mother explained the boy's absence from School to the Attendance Officer as being due to a "cold," with the result that no suspicion was raised as to the true nature of his illness, which was almost certainly a mild attack of diphtheria, as cultures from his nose and throat showed the specific bacillus. Four days later the School Teacher reported that G. M. and W. M., children residing next door to R. F., were absent on account of illness, and upon their illness being investigated they were also found to be suffering from diphtheria. G. M. had evidently attended School in an infectious condition, as three cases of diphtheria arose among the pupils of her class in the girls' department during the next ten days; this led to the repeated examination of every possible contact, and the exclusion of three "diphtheria carriers," with the result that the outbreak came to an end. From this brief account it will be seen that one unrecognised case led to much laborious visiting and considerable laboratory work, and to the occurrence of no fewer than eleven cases, none of which happily were fatal.

## Typhoid Fever.

For the first time on record no death from this disease occurred in the Borough during 1909. Moreover only three notifications of typhoid fever were received during the year, in March, April and July respectively, and of these, one was subsequently withdrawn and one referred to an imported case. Hence only one case indigenous to the Borough was notified during the year which is in striking contrast with the experience of past years as shown in the table below.

## TYPHOID FEVER.

| Year | Population | Number of Notifications excluding those subsequently withdrawn | Imported | Indigenous | Indigenous cases per 1000 Population | Number of Deaths | Deaths per 1000 Population |
|---|---|---|---|---|---|---|---|
| 1893 | 13603 | 136 | 4 | 132 | 9·7 | 16 | 1·18 |
| 1894 | 15407 | 113 | — | 113 | 7·3 | 12 | ·778 |
| 1895 | 16203 | 95 | 6 | 89 | 5·4 | 8 | ·49 |
| 1896 | 17529 | 90 | 4 | 86 | 4·9 | 9 | ·51 |
| 1897 | 19302 | 69 | 6 | 63 | 3·26 | 14 | ·72 |
| 1898 | 22583 | 105 | 10 | 95 | 5·4 | 15<br>+1 imported | ·71 |
| 1899 | 24710 | 57 | 5 | 52 | 2·3 | 6 | ·24 |
| 1900 | 27721 | 56 | 1 | 55 | 2·0 | 6 | ·22 |
| 1901 | 29793 | 49 | 6 | 43 | 1·5 | 8<br>+2 imported | ·27 |
| 1902 | 33537 | 105 | 4 | 101 | 3·0 | 12 | ·37 |
| 1903 | 37283 | 66 | 4 | 62 | 1·6 | 10 | ·27 |
| 1904 | 41944 | 15 | 6 | 9 | ·23 | 2 | ·04 |
| 1905 | 46383 | 20 | 2 | 18 | ·34 | 8 | ·17 |
| 1906 | 50302 | 17 | — | 17 | ·29 | 2 | ·04 |
| 1907 | 53283 | 19 | — | 19 | ·35 | 5 | ·09 |
| 1908 | 57399 | 26 | 6 | 20 | ·348 | 3 | ·05 |
| 1909 | 61268 | 2 | 1 | 1 | ·016 | 0 | ·00 |

The notification received in March was withdrawn two days later, the disease not proving to be typhoid fever but orchitis following mumps.

The April notification was of a young adult who had a mild but abortive attack of typhoid fever lasting about a fortnight. Enquiry into the origin of the infection showed no history of the consumption of shell-fish or of association with any other case of typhoid fever; the only suggestive fact elicited was that she, in common with the other members of the family, had partaken of water cress obtained from a source outside the Borough some weeks prior to the onset of her illness.

The July notification referred to a day tripper from one of the training ships on the Thames, who arrived in the Borough on 9th July, and being seized with abdominal pains during the afternoon was admitted to the local hospital. His symptoms were found in a day or two to point to a diagnosis of typhoid fever and led to a specimen of blood being examined for the Widal re-action with a markedly positive result. The patient was consequently removed to the Borough Sanatorium where after a severe and typical attack he made a good recovery. Enquiry showed that the boy had been ailing for ten days or so before his visit, but had not reported himself sick as he was anxious to accompany his schoolfellows on the day-trip to the Borough.

The preventive measures adopted in the past against typhoid fever in the Borough have been detailed in the Annual Reports for previous years by Dr. Clough Waters and Dr. Nash, my predecessors as Medical Officer of Health. As a result of the bringing up to modern standards of the house drainage in the older portion of the town, and of the care taken to prevent the consumption of shell-fish obtained from doubtful sources, a marked fall in the incidence of typhoid fever can be traced between the years 1893 and 1904, the number of indigenous cases per 1,000 inhabitants declining from 9.7 in the former year to .23 in the latter. The incidence however has since remained approximately constant, being .34 in 1905, .29 in 1906, .35 in 1907 and .348 in 1908, and the majority of the cases which have occurred in these years have been associated with the consumption of oysters which however were not obtained from a fish shop or a reputable oyster dealer, but were either picked up by the patient or his friends from the foreshore of the Thames Estuary or bought from street hawkers who had themselves obtained them in a similar way. Not only have many of the cases which have arisen in the Borough been attributed to shell-fish procured in this manner from other than properly protected beds, but Medical Officers of Health of some London Boroughs and extra Metropolitan Urban Districts have assigned the cause of many of the cases which have arisen in their districts to the consumption of shell-fish either gathered by the patients themselves when on a visit to the neighbourhood or sent to them by their friends.

The foreshore of the Thames Estuary is admitted to be unusually fertile as regards shell-fish, especially oysters, which rapidly " fatten " and improve in condition when deposited on it. By no stretch of the imagination, however, can it be regarded as a " properly protected shell-fishery," from which alone should oysters be taken for human consumption without prior purification, and this was recognised by the Council as long ago as 1897 when upon Dr. Waters' advice they extinguished at considerable cost an oyster fishery which up to that time had existed on the foreshore. The consumption of oysters gathered from the foreshore at any portion of the Estuary must necessarily be regarded as not free from danger unless such shell-fish has first been placed in pure layings for a sufficiently long time to purify. Impressed by this consideration, and being anxious in the interests of the Public Health that no person should at any rate run any risk of developing typhoid fever from the consumption of oysters gathered from that portion of the foreshore which is owned by the Corporation, the Health Committee, acting upon a report which I presented to them at the end of 1908, represented to the Pier Committee (under whose control the Corporation's foreshore is) that steps should be taken to prevent unauthorised persons from collecting shell-fish from it either for their own consumption or for the purpose of sale. The Pier Committee at once agreed to take action, and pending further arrangements employed three men to watch the foreshore with instructions to prevent a continuance of the practice of collecting the shell-fish for human food. It was soon found however that these men were defied by the offenders who, accustomed to gather the oysters lying on the foreshore, resented any interference with their supposed rights, and as the then Town Clerk advised that under existing circumstances proceedings against them might fail on legal grounds it was apparent that other measures had to be taken.

The suggestion that all the shell-fish on the foreshore should be collected by the Corporation and destroyed was deemed impracticable not only on account of the extent and fertility of the foreshore but because oyster spat, &c., floating in the Estuary from perhaps distant beds was constantly being deposited on it; moreover, it was borne in mind that only a portion of the foreshore of the Thames Estuary was under the jurisdiction of the Corporation, that a year or two would elapse before the whole of this portion could be dealt with, during which time the Corporation would be unable to prevent the shell-fish being gathered and perhaps sold for human consumption, and that great expense would be annually entailed for an indefinite number of years to come owing to the fact that no sooner had the whole of the foreshore been dealt with than it would be necessary to commence again at the portion first attacked.

After much consideration the Pier Committee came to the conclusion that the best method of dealing with the question was the leasing of the foreshore to a responsible person or company who should comply with certain conditions regarded by the Health Committee as being essential in the interests of the Public Health.

The agreement with the Southend Shell-fish Company, to whom the tenancy of the foreshore was granted for three years at a rental of £10 per annum, stipulates, *inter alia,* that no oysters or other shell-fish (except cockles) shall be removed from the foreshore by the tenants except for the purpose of being placed in suitable beds for a period of time sufficient for purification, and that cockles removed from the foreshore shall before sale be boiled, steamed, or otherwise treated *by the tenants* so as to render them sterile from a bacteriological point of view; that the tenants use every endeavour to prevent unauthorised persons removing oysters or other shellfish from the foreshore; that the laying on the foreshore of spat or of any shell-fish obtained from beds elsewhere is prohibited, and that no shell-fish or spat removed from any one portion of the foreshore be deposited on any other portion of the foreshore; and that as far as possible the foreshore be cleared of all shell-fish, more especially oysters, as soon as practicable after they are detected.

It will be seen that these conditions were so drawn up as to prevent any possibility of the return to the old state of affairs in which oysters were deposited in definite beds on the foreshore. It was recognised that it would be impossible to prevent at all times unauthorised persons from gathering the shell-fish and possibly disposing of them for human consumption before purification and, as the object in view would be defeated if the tenants carried out their operations in such a manner that there would at any time be an increase in the number of edible oysters or other shell-fish lying on the foreshore, clauses were inserted in the agreement so as to preclude any possibility of this occurring.

The leasing of the foreshore was a measure undertaken not with the object of financial gain, but solely with a view to the safeguarding of the public health not only of the inhabitants and visitors to the Borough, but of other districts to which the shell-fish might be sent without purification. The Shell-fish Company selected is a local one, the partners being all prominent tradesmen in the Borough. Although doubtless some unauthorised removal of oysters, &c., does take place in spite of the steps taken to prevent it, the terms of the agreement are so far as I am aware being carried out by the Company, who have in several instances taken proceedings on account of the illegal removal of shell-fish.

Without claiming too much for this measure I think it may be said that results have justified the action of the Corporation. That some such steps should be taken to prevent the consumption of oysters from the foreshore before purification was suggested by Dr. Clough Waters in his Annual Report for 1900 as Medical Officer of Health for the Borough, but no measures were taken, except that in the following year, upon the advice of his successor, Dr. Nash, notice boards were erected at intervals along the foreshore, warning the public against collecting the shell-fish, and pointing out that care should be taken to eat only such shell-fish as are cultivated under proper supervision. These notice boards however did not remain up long, as their erection did not meet with universal approval in the Borough, it being thought to cast a reflection upon the cleanliness and freedom from pollution of the foreshore—an inference in my opinion quite without justification.

Other districts on the Thames Estuary have not shown any corresponding diminution in the prevalence of typhoid fever, and the same remark applies to other seaside towns where the proximity of an unprotected shell fishery has led to an undue incidence of typhoid fever in previous years. Sporadic cases will doubtless continue to occur in our Borough; in spite of all warnings persons will continue to eat oysters obtained from other than reputable oyster merchants; cockles obtained from polluted sources and insufficiently cooked may from time to time be sold in the Borough notwithstanding constant watchfulness on the part of the Health Officials; some misguided individuals will doubtless continue to eat before purification shell-fish gathered surreptitiously from the foreshore either in the neighbourhood of Southend or in the adjoining districts, and a proportion of these will inevitably pay the penalty for their folly by developing the disease; visitors, and in some cases residents, will from time to time arrive in the Borough in the incubation or incipient stages of the illness; "typhoid carriers," *i.e.*, persons who, although seemingly in good health, long after an attack of typhoid fever excrete from time to time typhoid bacilli, may give rise to occasional cases.

Although the consumption of polluted shell-fish was unquestionably the main cause of the excessive prevalence of typhoid fever in past years, it is possible that other factors even now not definitely recognised may have assisted towards the same end, but whether this be so or not they are certainly not now operative as the typhoid incidence in the Borough is far below the average for other English towns, whether inland or on the coast.

With increased knowledge on the part of the public and with the greater attention now paid by shell-fish merchants to the necessity of purifying before sale all oysters, &c., obtained from doubtful sources, one is justified in the hope that in the future cases of typhoid fever will only exceptionally occur, and that deaths from the disease will be correspondingly rare.

## Erysipelas.

Nineteen cases of erysipelas were notified during the year, none of which were fatal. A sanitary inspection of the houses in which the cases occurred was made, but apart from this no steps were taken as the result of the receipt of the notifications. As was remarked in last year's Annual Report no useful purpose appears to be served by the compulsory notification of these cases.

## Puerperal Fever.

Only one case of puerperal fever was notified in the person of a young woman who was attended during her confinement by a registered midwife; on the fifth day of the puerperium the patient became feverish and a medical practitioner was called in. The patient made a good recovery, and no other cases occurred.

One fatal case of puerperal fever escaped notification, the diagnosis only having been made as the result of a post mortem examination held by order of the Coroner. In this case the deceased was not attended in her confinement by either a medical man or by a registered midwife, and a few days later became seriously ill though medical advice was not sought until shortly before death. The jury at the inquest returned a verdict of "Death from acute septic poisoning from purulent peritonitis following childbirth."

## Other Zymotic Diseases.

### Diarrhœa.

The year 1909 was characterised by the very few cases of summer diarrhœa which occurred, and as a result only five deaths attributed to diarrhœa, zymotic diarrhœa, or infective enteritis have to be recorded, giving a zymotic death rate of .08 per 1,000 population, the lowest ever recorded, as will be seen from the following table :—

| Year | No. of Deaths from Diarrhœa | Deaths from Zymotic Diarrhœa per 1000 Births | Death Rate from Zymotic Diarrhœa per 1000 population |
|---|---|---|---|
| 1899 | 25 | 38·0 | 1·01 |
| 1900 | 15 | 20·3 | 0·54 |
| 1901 | 34 | 43·5 | 1·15 |
| 1902 | 8 | 13·1 | 0·24 |
| 1903 | 6 | 16·0 | 0·16 |
| 1904 | 84 | 79·4 | 2·00 |
| 1905 | 24 | 28·3 | 0.51 |
| 1906 | 72 | 63·9 | 1·43 |
| 1907 | 11 | 10·5 | 0·15 |
| 1908 | 21 | 19·1 | 0·36 |
| 1909 | 5 | 4·3 | 0·08 |

The diminished incidence of this disease was associated with the very small number of flies that were noticeable at any time during the year, and both circumstances are doubtless attributable to the wet and cold weather experienced in the summer and early autumn.

Of the deaths, three were of infants under one year of age, and occurred in March, September and December respectively; all the deceased had been fed on cow's milk by means of a boat bottle. The other deaths from diarrhœa were of a man aged 77, who died in March, and of a child aged 22 months, who died in September.

## Measles.

Measles was extremely prevalent in the Borough during May, June and July, and was the cause of nine deaths, giving a zymotic death rate of .14 per 1,000. The first intimation of measles was received on May 18th, from the Head Teacher of Brewery Road Infants' School, and as there was reason to believe that the patient in question was the primary case, and had attended school in the incipient and infectious stages of the illness, class closure from the ninth to the fourteenth day after the onset of the disease was advised with a view to the exclusion of the contacts during the period when they were most likely to develop the disease. The measure was unsuccessful, and enquiry later showed that several other cases had occurred about the same time in the vicinity. Seven cases were on May 29th reported from the Bournemouth Park Road Infants' School, and in spite of exclusion of susceptible contacts the disease rapidly spread, and by June 11th out of 218 on the books of the latter school 67 were absent, and of these 32 were definitely known to have measles; all the classes were infected, but fortunately the greater number of cases occurred among the older children, among whom fatal results are least probable. At the Brewery Road Infants' School only 168 were in attendance out of 232 on the books, and several of these were commencing to show the initial symptoms. As it was obvious that children were attending school in the early infectious period of the disease, the Health Committee, acting upon my advice, closed the Infants' Department of both schools for three weeks from June 11th.

The occurrence of measles at this period was particularly unfortunate, and several circumstances combined to render its spread the more difficult to prevent. The Attendance Officers had been engaged in scheduling and consequently information of the first cases was not received as early as is customary. The commencement of the new school year necessitated the redistribution of children among the various classes of the infants' departments, and also the transfer of children from the schools infected to some of the other infants' schools in the Borough owing to change of residence. A list of the children thus transferred was obtained, and those who had not had measles were temporarily excluded from attendance.

In spite of every precaution, the disease rapidly spread to other schools in the Borough, with the result that it became necessary on July 8th for the Health Committee to close the infants' departments of the Leigh Road Schools and of the Southchurch Hall School for a period of three weeks. Cases occurred among the children attending the other infants' schools, but it was not however found necessary to advise their closure, and by the commencement of the summer vacation which started one week earlier than usual owing to the visit of the Fleets, the disease had made but little headway in them.

Of the nine children whose deaths during the year were attributed to measles, seven were under school age, but were doubtless infected by other members of the family in attendance at school. No fewer than 256 intimations were received at the Health Office of cases of measles; the homes of the majority of these children were visited, and pamphlets giving the precautions necessary to prevent infection and advice as to the care necessary in the management of the disease were left with the parents. There can be no question that parents are still apt to look upon measles as a trivial disease for which treatment is not required, though it is apparent that the efforts in past years to educate the parents as to the seriousness of the ailment are beginning to bear fruit. Very little attempt is made to isolate the child first attacked, as it is regarded as certain that the other susceptible inmates of the house will develop the disease. When the homes are visited stress is laid on the importance of safeguarding if possible infants and the very young members of a family from contracting the disease, and the seriousness of the disease in children under five is insisted upon. To the numerous home visits made I attribute the fact that although the disease was far more prevalent in the Borough than it has been in recent years the number of deaths has not markedly increased.

The number of deaths from measles which have occurred in the Borough in recent years is shown in the following table, which also demonstrates the increase in the number of deaths which has to be recorded every alternate year, and which is due to the regularly recurring increased prevalence of the disease; in the year following an extensive outbreak of measles there is a diminution in prevalence to be followed a year later by another outbreak, when the number of susceptible children liable to be attacked has increased.

MEASLES AND WHOOPING COUGH.

| Year | Estimated Population | MEASLES. | | WHOOPING COUGH | |
|---|---|---|---|---|---|
| | | No. of Deaths | Deaths per 1000 Population | No. of Deaths | Deaths per 1000 Population |
| 1899 | 24710 | — | ·00 | 1 | ·04 |
| 1900 | 27721 | 4 | ·14 | 2 | ·07 |
| 1901 | 29793 | 11 | ·37 | 25 | ·84 |
| 1902 | 35337 | 2 | ·06 | 8 | ·25 |
| 1903 | 37283 | 7 | ·18 | 8 | 20 |
| 1904 | 41944 | 3 | ·07 | 5 | ·12 |
| 1905 | 46380 | 6 | ·13 | 18 | ·38 |
| 1906 | 50302 | 3 | ·06 | 2 | ·04 |
| 1907 | 53283 | 7 | ·13 | 20 | ·38 |
| 1908 | 57399 | 2 | ·03 | 3 | ·05 |
| 1909 | 61268 | 9 | ·14 | 11 | ·18 |

## Whooping Cough.

Eleven deaths of children from whooping cough were registered during the year, giving a zymotic death rate of .18 per 1,000 inhabitants. All the deceased were under five years of age, four being infants under one. A few cases occurred at each of the infants' schools in the Borough, but in none did an outbreak occur, and it was unnecessary to advise school closure. The infected children were excluded, as also any susceptible contacts from the same house who attend the infants' departments. The homes of most of the children who were reported to have whooping cough were visited and pamphlets giving advice as to precautions and management of the illness were left with the parents.

## Other Infectious Diseases.

### Mumps.

Mumps was very prevalent during the early months of the year, particularly in the London Road Infants' School. Although a comparatively unimportant disease from the point of view of risk to life, mumps is a very troublesome disease to eradicate if it commences to spread in a school. It is very infectious, and somewhat difficult for parents and teachers to recognise in the early stages. A large number of the children reported to have mumps were visited and in nearly half the cases where the diagnosis had been made by the parents, the disease was found not to be mumps but swollen glands, the result of a cold, sore throat, decayed teeth, and in two cases due to diphtheria. Children found to have definite mumps were excluded for three weeks from the onset of the disease. Contacts from the same house as the first cases which occurred in a department of a school were also excluded if they had not had the disease, but this was not done when the disease had become at all prevalent.

### Chicken Pox.

A few cases of chicken pox occurred from time to time in various elementary schools, but in no instance was there any great spread of the disease. Children were excluded for three weeks at least, and longer if the scabs had not all separated.

## Disinfection after Infectious Diseases.

After the occurrence of any of the notifiable diseases, except erysipelas, and after death or removal of persons suffering from phthisis, the infected rooms are disinfected by the officers of the Health Department free of charge by means of formalin vapour, or in some cases by the formalin spray. Bedding, carpets, etc., are removed to the Disinfecting Station at the Sanatorium for steam disinfection in a Washington Lyon machine. Leather goods, furs, etc., are disinfected by formalin in a closed chamber. Although no fewer than 11,820 articles were dealt with according to one or the other of these methods during the year, it is satisfactory to be able to record that no complaints of damage to or loss of goods were received.

Seventy houses were disinfected after death from pulmonary tuberculosis and 34 after removals of patients suffering from tuberculosis. Ten houses were similarly dealt with after death from cancer. The disinfecting staff also dealt with 21 houses in which measles had developed, three in which attacks of lobar pneumonia had proved fatal, and eight in which deaths from various other diseases, including glanders, had occurred. Six houses occupied by children found to be attending school in a verminous condition also received attention from the disinfectors, the bedrooms in particular being dealt with, and all bedding, &c., removed to the Disinfecting Station for steam disinfection.

For several days after the removal of a case of typhoid fever to the Sanatorium, and throughout the course of the disease if the patient is treated at home, it has for several years past been customary to have the house drains and adjoining sewer flushed and disinfected daily by members of the Surveyor's staff.

Disinfectants are distributed on application at the Health Department to houses where infectious diseases have occurred. Requests for the gratuitous distribution of disinfectants for pouring down offensive sink wastes, &c., are, however, not acceded to until after a visit of inspection, the fact that such a proceeding is called for being regarded as evidence of a defect or of want of cleanliness.

All books returned to the Public Library are before re-issue disinfected by formalin vapour in a chamber provided for that purpose at the Library; any such books found in a house in which cases of infectious disease have occurred are disinfected at the Disinfecting Station before they are returned to the Library.

## Drain Testing after Occurrence of Infectious Diseases.

Although modern bacteriological methods have shown that the infection of scarlet fever and diphtheria are probably not due to faulty drains, &c., it is generally accepted that the escape of sewer gas into houses and the offensive smells which arise from untrapped sink wastes, &c., lead to an impairment of the general health, and thus may indirectly increase the risk of infection by rendering the person more susceptible.

The drains are tested as a routine measure after the occurrence in any house of typhoid fever or diphtheria, and in the majority of houses in which cases of scarlet fever have been notified. The results obtained are shown in the following table.

| | No. of Houses in which no defects were found. | No. of houses in which slight Defects were found. | No. of Houses in which serious Defects were found. |
|---|---|---|---|
| Scarlet fever ...... | 55 | 40 | 8 |
| Diphtheria ......... | 39 | 23 | 8 |
| Typhoid fever ...... | 1 | — | — |
| Erysipelas ......... | 6 | 3 | 1 |
| Total ............ | 101 | 66 | 17 |

The drains, &c., of several houses, the residents in which have frequently suffered from attacks of sore throat, have been examined during the year at the request of the Medical Attendant, and in many cases the remedying of some insanitary condition thus discovered has led to an improvement in the general health of the inmates.

## BOROUGH SANATORIUM.

During the year 223 patients were admitted to the Borough Sanatorium; of these two were suffering from typhoid fever, 55 from diphtheria, and 156 from scarlet fever; seven were diphtheria carriers who could not be efficiently isolated at home, and were placed in an observation ward till free from diphtheria bacilli; one was a patient admitted for observation as a doubtful case of diphtheritic croup, but whose illness proved to be measles complicated by laryngeal symptoms; one was a patient with a rash resembling scarlet fever, but which proved to be an eczema rash; while the remaining patient was an infant admitted with mother, who was suffering from scarlet fever.

The following table shows the number of patients under treatment during the year.

| Disease | Remaining in Sanatorium on December 31st, 1908 | Admitted from 1st Jan., 09 to Dec. 31st 1909 | Total under Treatment in 1909 | Discharged during 1909 | Died during 1909 | Remaining on December 31st, 1909 |
|---|---|---|---|---|---|---|
| Scarlet Fever | 16 | 156 | 172 | 162 | 2 | 8 |
| Diphtheria | 6 | 55 | 61 | 56 | 3 | 2 |
| Diphtheria carriers | — | 7 | 7 | 7 | — | — |
| Typhoid Fever | 4 | 2 | 6 | 6 | — | — |
| Other Diseases | — | 2 | 2 | 2 | — | — |
| Admitted with Mother | — | 1 | 1 | 1 | — | — |

The arrangement by means of which patients, if they so desire, may continue to be treated by their own doctor after removal to the Sanatorium continues to work satisfactorily; one case of typhoid, one case of diphtheria, and ten cases of scarlet fever were so treated during the year, one doctor attending five members of one family, all patients at the same time, two doctors attending two patients each, and three doctors one patient each.

Of the cases occurring during the year, both the typhoid fever cases, 85 per cent. of the scarlet fever cases, and 74 per cent. of the diphtheria cases were treated in the Sanatorium. Provided it is probable that the patient will be efficiently and intelligently isolated at home in a separate room with separate attendance, no pressure is brought to bear to secure removal to hospital unless the house happens to be a boarding house, dairy, or other business place frequented by the public. The good reputation which the Sanatorium now enjoys is shown by the readiness with which parents allow their children to be removed when suffering from infectious ailments, and ratepayers and visitors alike, irrespective of their social and financial position, now gladly avail themselves of the accommodation provided.

For a short period during March, as a result of the sharp but slight outbreak in Prittlewell, the accommodation for scarlet fever proved for a few days to be insufficient to allow of the isolation of all patients whose parents desired their removal, but all were removed who could not be isolated at home, and the pressure on the accommodation was relieved in the course of two or three weeks.

### Improvements during the Year.

A new pavilion of two eight-bedded wards with two one-bedded separation rooms attached has been erected and will soon be ready for use. The Council will shortly invite tenders for the erection of the new Nurses' Home and Administrative Block, the building of which will complete the alterations and additions for which a loan of £8,000 was sanctioned in 1907, and will enable all the members of the Nursing Staff to be housed within the walls of the Sanatorium.

Until the Nurses' Home is ready for occupation it would be futile to provide any additional accommodation at the Sanatorium as there would be no quarters for the nursing staff.

A seaside resort should have accommodation for the reception of all cases of infectious disease likely to arise at times other than during the course of a big outbreak. Inability from lack of accommodation to remove a case of scarlet fever from a boarding house during the summer season would probably inflict great financial loss upon the proprietor, who in spite of his having helped to maintain the Sanatorium by payment of his rates for years would at the time of his need fail to derive benefit from its existence. Hence, apart from the safeguarding of the public health and the reputation of the Borough, it is essential in the interests of the individual ratepayer that the accommodation at the Sanatorium shall be increased from time to time as the growth of the Borough proceeds. Although fortunately it is not necessary to keep all the wards at the Sanatorium open during the greater part of the year, it cannot be said, in view of the rapid increase in the population, that there is a sufficient margin to ensure safety, and it will consequently be necessary within the next few years to carry out further additions. It has to be remembered that accommodation has always to be provided for at least three diseases, viz., scarlet fever, diphtheria and typhoid fever, and that under existing arrangements if there are more than eight diphtheria or eight typhoid patients the available accommodation for scarlet fever patients is but 34 beds, and as the average stay of each scarlet fever patient is over six weeks, difficulty would even arise if more than 22 such patients required isolation in each of two successive months, a not improbable event in a town of over 61,000 inhabitants, with many thousands of temporary residents during several months of the year. As soon consequently as the new Nurses' Home has been erected, it will be advisable to build another pavilion, which should preferably be on the cubicle system, and thus not only provide the additional accommodation but also remove the great defect in the present arrangements, viz., the shortage in isolation accommodation for the reception of doubtful cases and of mixed cases of infection.

## Cost of Maintenance, &c.

The following statement, extracted from the official Abstract of Accounts, shows the expenditure, &c., on the Borough Sanatorium and Borough Laboratory during the year ended 31st March, 1909.

### EXPENDITURE FOR THE YEAR ENDED 31st MARCH, 1909.

| | | | | | | |
|---|---|---|---|---|---|---|
| SANATORIUM— | | | | | | |
| Salaries and Wages— | | | | | | |
| Medical Superintendent | 80 | 0 | 0 | | | |
| Nurse Matron | 65 | 16 | 8 | | | |
| Nurses and Probationers | 142 | 3 | 9 | | | |
| Wardmaids and Servants | 106 | 12 | 9 | | | |
| Laundresses | 75 | 8 | 0 | | | |
| Porter and Workmen, &c. | 239 | 8 | 11 | | | |
| | | | | 709 | 10 | 1 |
| Medicines, Surgical Appliances and Disinfectants | 106 | 3 | 0 | | | |
| Provisions for Staff and Patients | 705 | 11 | 1 | | | |
| Clothing for Patients, Linen, Drapery, Repair of Mattresses, &c. | 129 | 17 | 0 | | | |
| Crockery and Ironmongery | 50 | 9 | 7 | | | |
| Removal of Patients to Sanatorium | 55 | 18 | 6 | | | |
| | | | | 1047 | 19 | 2 |
| Rates, Taxes, Insurance | 30 | 13 | 1 | | | |
| Rent of Telephones | 15 | 13 | 0 | | | |
| Garden | 4 | 18 | 0 | | | |
| Rent of Nurses' Home | 33 | 17 | 10 | | | |
| Gas | 133 | 19 | 2 | | | |
| Water Supply and Flushing | 42 | 0 | 1 | | | |
| Coal, Coke, Firewood | 142 | 11 | 8 | | | |
| Electricity | 10 | 3 | 0 | | | |
| | | | | 413 | 15 | 10 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Repairs and Alterations | 16 | 3 | 9 | | | |
| Hire of Steam Roller | 2 | 6 | 6 | | | |
| Team Labour | 3 | 2 | 9 | | | |
| Advertising, Printing, Stationery, Stamps | 17 | 13 | 11 | | | |
| Agreement and Contract Stamps | 2 | 10 | 0 | | | |
| Sundries | 9 | 8 | 0 | | | |
| | | | | 51 | 4 | 11 |
| LABORATORY— | | | | | | |
| Chemicals and Sundries | 2 | 12 | 6 | | | |
| Attendant's Wages | 20 | 16 | 0 | | | |
| | | | | 23 | 8 | 6 |
| | | | | 2246 | 18 | 6 |
| Less Transfers to Other Accounts | | | | 0 | 0 | 11 |
| | | | | £2,246 | 17 | 7 |

INCOME.

| | | | | | | |
|---|---|---|---|---|---|---|
| Receipts from Patients | 264 | 11 | 10 | | | |
| Sundries | 7 | 18 | 3 | | | |
| Establishment Grant from County Council | 94 | 10 | 0 | | | |
| | | | | 367 | 0 | 1 |
| | | | | £1,879 | 17 | 6 |

## SMALL POX HOSPITAL.

The Smallpox Hospital in Sutton Road is visited at regular intervals by the staff of the Health Department, and is maintained in a state of readiness for the immediate admission of patients should necessity arise.

The present hospital provides accommodation for 12 patients only, and it is probable that additions will have to be made in the event of an outbreak of smallpox, should the latter disease become at all prevalent.

## THE BOROUGH LABORATORY.

During the year 1886 specimens of various kinds from cases of infectious diseases were bacteriologically examined.

Of these 28 were specimens for determination of Widal's re-action, and of these two gave a positive, one a doubtful, and 24 a negative result.

Of 105 specimens of sputum sent by doctors for examination for the presence of tubercle bacilli, 27 gave a positive re-action.

849 swabs from the nose or throat of 693 patients were received from medical practitioners in the town for examination as to the presence of the diphtheria bacillus; of these 134 were found to be positive, 708 negative, and 7 were doubtful. The majority of these were from suspected cases of diphtheria or from diphtheria contacts, but some were for the purpose of deciding whether a home-treated patient was free from infection.

661 swabs from the nose or throat of patients in the Sanatorium were made, generally with a view to deciding whether a diphtheria patient was ready for discharge, but some however were from scarlet fever patients with suspicious throats or nasal discharge in case there was a co-existence of the two diseases.

Three specimens of pus obtained from abscesses were also sent for examination.

Fifteen samples of cockles and four of oysters were examined with a view to detecting evidence of contamination or ascertaining whether the cooking process in the case of the cockles was efficient in sterilising the shell-fish.

243 specimens of hairs from suspicious cases of ringworm were microscopically examined during the year either with a view to confirm the clinical diagnosis or of ascertaining whether the patient was free from contagion.

Fifteen samples of drinking water were examined chemically and bacteriologically during the course of the year.

The work varied considerably from month to month, as will be seen from the table on page 70 which shows the number of specimens from cases of diphtheria, tuberculosis, typhoid fever and ringworm examined each month, and also in each year since the establishment of the Laboratory in 1900.

Number of specimens examined each month in 1909 and in previous years.

| Month | Swabs sent by Doctors from suspected Diphtheria Patients | Swabs taken from In-Patients at Sanatorium | Total Diphtheria Swabs examined | Specimens of Blood from suspected Typhoid Fever | Specimens of Sputum from suspected Tuberculosis | Specimens of Hairs from suspected Ringworm | Total |
|---|---|---|---|---|---|---|---|
| January | 19 | 26 | 45 | — | 15 | 10 | 70 |
| February | 26 | 25 | 51 | 3 | 14 | 16 | 84 |
| March | 19 | 37 | 56 | 6 | 11 | 7 | 80 |
| April | 39 | 28 | 67 | 3 | 6 | 12 | 88 |
| May | 34 | 30 | 64 | 4 | 10 | 7 | 85 |
| June | 37 | 2 | 39 | — | 7 | 23 | 69 |
| July | 18 | 13 | 31 | 2 | 4 | 6 | 43 |
| August | 61 | 48 | 109 | — | 8 | 32 | 149 |
| September | 59 | 105 | 164 | 4 | 10 | 30 | 208 |
| October | 238 | 100 | 338 | | 5 | 31 | 374 |
| November | 188 | 133 | 321 | 2 | 6 | 37 | 366 |
| December | 111 | 114 | 225 | 4 | 9 | 32 | 270 |
| Total 1909 | 849 | 661 | 1510 | 28 | 105 | 243 | 1886 |
| 1908 | 386 | 438 | 824 | 61 | 74 | 61 | 1023 |
| 1907 | 385 | 659 | 1044 | 57 | 59 | 32 | 1192 |
| 1906 | 500 | 584 | 1084 | 52 | 56 | 5 | 1197 |
| 1905 | 445 | 470 | 915 | 67 | 33 | — | 1015 |
| 1904 | 569 | 348 | 917 | 74 | 32 | — | 1023 |
| 1903 | 191 | 456 | 647 | 59 | 21 | — | 727 |
| 1902 | 252 | 431 | 683 | 109 | 24 | — | 816 |
| 1901 | 76 | 159 | 235 | 33 | 4 | — | 272 |
| 1900 | — | 6 | 6 | — | — | — | 6 |

# SANITARY INSPECTION AND ADMINISTRATION.

# SANITARY INSPECTION AND ADMINISTRATION.

In company with one or other of the Sanitary Inspectors I made 132 inspections of the district during the year, in addition to numerous inspections while unaccompanied. All parts of the Borough were visited from time to time, and the majority of the dairies, cowsheds, slaughterhouses, and other places under sanitary supervision were inspected by me during the course of the year. Special attention has been paid to the outlying and more rural portions of the Borough where the existence of cesspools, the drainage of slop waters into neighbouring ditches, and the antiquity of many of the poorer dwelling houses render frequent inspections essential in the effort to maintain the sanitation of the Borough at a high level. Among the matters which have engaged my particular attention special reference may be made to the following :—

## Cesspools.

The cesspools on the area which intervenes between Leigh Road West and the London Road in the extreme western portion of the Borough have been a frequent source of nuisance in spite of constant surveillance by the Inspectors. Upon several occasions it has become necessary to disinfect with lime the land which has been fouled by the overflow of the sewage, and every effort has been made to avoid the occurrence of a nuisance. Owing either to the original construction of some of the cesspools being defective or to the subsequent occurrence of defects, surface water percolates through the walls, with the result that almost daily emptying of some of the cesspools becomes necessary to ensure that no overflow shall take place. Fortunately with the completion of the work of extending the Fairfax Drive sewer it will shortly be possible to connect these houses with the sewer, so that the present very undesirable state of affairs will come to an end. The cesspools on the Coleman's Estate have also upon some occasions given rise to nuisance owing to want of regular attention, but those at Bournes Green and on the Hamstell's Estate are satisfactorily attended to in the majority of instances.

## Van Dwellers, &c.

There are no permanent encampments of van dwellers and tent dwellers in the Borough, but frequent complaints about nuisances alleged to be caused by their temporary encampment on various vacant building plots, &c., in the Borough continue to be received at the Health Office. Occasionally complaints are received about tents being erected for occupation by people of this class, but as these tents are seldom waterproof and are practically never provided with suitable flooring, a notice to remedy these defects can be served, and is always promptly followed by the removal of the tent complained of. The van dwellers, usually itinerant hawkers and pedlars, generally select as their squatting ground the large tracts of ground on the Southbourne and Coleman's Estates, which though marked out in building plots are quite unenclosed, and thus afford no obstacles to the vans being driven on to the fields even considerable distances from the highway; here they remain for a few days, sometimes longer, returning again after the lapse of a month or two. Great difficulty is met with in ascertaining the names of the owners as all traces of the name-plate are usually removed as soon as the van becomes stationary, and any information is refused. This year other vacant and unenclosed plots of ground nearer the central portions of the Borough have been invaded, with the result that complaints have been far more numerous, and have been extremely difficult to deal with.

The byelaws dealing with tents and vans in force in the Borough were adopted by the Town Council in 1899, and are identical with those issued at that time by the Local Government Board as model byelaws. They include provisions requiring that the vans, tents, &c., shall be cleansed from time to time, be properly ventilated, and be reasonably waterproof. By section 6 the occupier has to provide a sufficient receptacle with proper coverings for the storage of water, and also a sufficient supply of wholesome water, while section 13 requires that there shall be a sufficient receptacle for refuse. There are other sections which prohibit the retention of any solid or liquid filth in the van, tent, &c., or its deposit within 30 feet of such van or in any other place so as to be a nuisance. There are no clauses which insist upon the provision of any privy accommodation, and it is in this direction that our present byelaws are defective, as the requirements of sections 6 and 13 are easily met by the production of an earthenware bottle and of a wooden or tin box respectively.

In the new model byelaws of the Local Government Board issued in January, 1906, is a clause to the effect that the person by agreement with or by licence from whom any tent, van, &c., shall be erected, brought or used on any land shall in any case in which a nuisance is likely to arise from the want of privy accommodation &c., provide the same on such land. The revision of our byelaws by the insertion of this clause would, however, be quite useless, as in all the instances which have come under notice the van dwellers have been trespassers and have squatted on the land for short periods without obtaining the consent of the owner. Moreover, the plot owners are so numerous and the area of the several plots so ill-defined that considerable difficulty would in any case arise in an endeavour to enforce this clause.

The Rochford Rural District Council in their byelaws adopted in 1905 have had inserted a clause requiring the occupier of any van to provide sufficient privy accommodation unless it does not remain upon any site or within 300 feet therefrom for a longer period than 72 hours in succession. A similar requirement in our byelaws would be of service in enabling us to deal more effectually with some of the complaints which we receive, and the Health Committee are applying to the Local Government Board for the necessary consent. It has to be remarked, however, that many of the vans complained of do not remain on one site for more than two or three days, and in some cases are used for hawking, &c., in the town during the day, only returning to the vacant plot of ground as evening approaches, and in dealing with the latter group it is doubtful whether the proposed clause would assist us much.

At the present time the only method open to us is to remove the vans by means of Corporation horses on to the highway, any further action being left to the police; at one time this manœuvre was efficacious, but in recent months the van dwellers themselves have moved the vans on to the highway or out of the Council's jurisdiction when they see the approach of the Corporation horses, only to return to the same site a few hours later. One great difficulty is that the van dwellers usually select the vacant plots of ground on the boundary between the Borough and the adjoining Rochford Rural district; being without proper privy accommodation they must not according to the Rochford byelaws remain on the plots in the latter district for more than three days in succession, so they halt their vans on the Borough side of the boundary only to cross over temporarily to the Rochford side if they see we are about to remove them on to the highway. Several van dwellers have told me that in the event of the Council's adopting a similar clause to that in the Rochford Rural District Council's byelaws they will provide a portable pail closet and thus prevent either authority from being able to harass them, as they express it.

It must be admitted that nuisances under the Public Health Acts are only very exceptionally found in the immediate neighbourhood of these caravans, and more particularly is this so when they are stationed on the comparatively small plots of vacant ground near the central portions of the town, as this usually happens only when the occupants have friends or relatives living in the Borough to whose houses they can resort when in need of sanitary accommodation.

Destruction of fences, damage to property, theft, and offences against decency, though the real cause in the majority of cases of the van dwellers being looked upon as undesirable neighbours, are not matters which come under our jurisdiction. It has to be remembered that so long as the very simple requirements of any byelaws in force are observed, it will be quite impossible for the Sanitary Authority to prohibit this variety of habitation. The real remedy for the grievances of those who dislike these vans being stationed even for short periods in their neighbourhood seems to be in the hands of the plot owners who should enclose their property and then proceed against the van dwellers for trespass in the event of these fences being broken down.

Section 31 of the Public Health Acts Amendment Act, 1907, is to the effect that if any land adjoining any street is allowed to remain unfenced, and if such land is on that account used for any purpose causing inconvenience or annoyance to the public, the Local Government Board on the application of the Local Authority may by Order empower the Local Authority to fence in the land after 14 days' notice to the owner, the expense being recoverable from the owner or occupier as a civil debt. To proceed under this section, it will be necessary to adopt the section of the Act and to apply to the Local Government Board for their Order in respect of each plot of land which it is desired should be fenced. It is possible the Local Government Board would not consider the temporary encampment of van dwellers on land to be an annoyance or inconvenience to the public, and would refuse the necessary Order. If, however, an Order was obtained the very great expense of fencing the large tracts of land on the Southbourne and Coleman's Estates which are now most frequently the site of the encampments quite precludes this method of dealing with the matter, but it might be possible in this way to prevent such encampments on the three or four small vacant building plots nearer the central portion of the town which have recently been selected by the van dwellers.

### **Public House Urinals.**

In spite of the constant attention bestowed on them by the Sanitary Inspectors, numerous complaints are received each year as to the nuisance which arises from the condition of many of the urinals attached to licensed premises in the Borough. This summer, owing probably to the larger influx of visitors due to the visit of the Fleets the complaints have been more frequent than usual, and the Health Committee consequently directed me to report on the question as it affected each of the licensed premises. This report was presented in October and showed that the present condition of many of the urinals is most insanitary. Several are not provided with any flushing apparatus at all, while in the majority of the urinals in which some flushing is attempted, the method adopted is by means of sparge pipes which owing to corrosion quickly become ineffective, with the result that the water does not properly flush the walls, but either trickles down in a narrow stream or else drops vertically without coming into contact with the walls at all. Even where sparge pipes have been installed it is exceptional to find that they run along the whole length of the surfaces liable to be fouled, and only in two or three instances was the flush being used as frequently as was necessary. In some cases no channel is provided and the floor is unsuitably sloped or defective, with the result that pooling occurs; the walls are in general rendered in cement which, owing to the defective flushing, quickly becomes encrusted, this condition leading in hot weather to the urinal becoming most offensive; the subsequent tarring of the walls only makes matters worse, as the rough surface becomes even more quickly encrusted, and the good effects first noticed soon pass off.

The urinals, although attached to licensed premises, are used to a great extent by the general public, and as many abut on to the footpaths of much frequented streets, the serious nuisance caused by their insanitary condition is a matter likely to affect injuriously the reputation of the Borough for cleanliness and sanitation. By an unfortunate coincidence the urinals which are the most primitive in their construction and most offensive in their condition are either attached to premises frequented by the largest numbers of visitors or else open directly on to public footpaths.

By Section 27 of the Southend-on-Sea Corporation Act, 1895, the Council may order the occupier of any inn, public house, beerhouse, or refreshment house built before or after the passing of the Act to provide and maintain upon his premises in a position to be specified in the Order urinals to the satisfaction of the Corporation, and acting under this section the Health Committee have required twelve of the occupiers of licensed premises in the Borough to reconstruct the urinals attached to their premises. The Committee have agreed upon certain requirements as regards the site, artificial lighting, and the ventilation of these urinals, and have pointed out that if automatic flushing tanks with spreaders instead of sparge pipes as distributors are provided, and if all surfaces liable to be fouled are of glazed ware slabs without stall partitions, there is every reason to hope that the urinals will require the minimum amount of attention and will remain free from offence during the hot weather. As regards the urinals attached to the other licensed premises in the Borough, the Committee have caused notices to be served on the occupiers to carry out the alterations necessary to put them in a sanitary condition, particular attention being paid to the adequacy and efficiency of the flushing arrangements.

## Garden Refuse, &c.

As in all other rapidly growing neighbourhoods, there exists particularly in the western portion of the Borough a large number of vacant building plots which being unfenced become the site of the deposit of garden refuse, fish offal, old wall papers, broken glass, crockery and every other kind of rubbish which householders in the neighbourhood desire to get rid of. With a selfishness which is hard to understand in any right-minded individual, a resident instructs his jobbing gardener or other servant to remove, generally after dark, any refuse of which he desires to be rid to a vacant plot as to the position of which he cares not so long as it is not in close proximity to his own residence. House decorators, glaziers, fish hawkers, greengrocers, and similar persons in the course of whose business refuse of various kinds is apt to accumulate are also responsible for much of the nuisance which thus arises. The bodies of dead dogs and cats thrown upon the foreshore or elsewhere in the Borough have constantly to be buried by the officers of the Health Department, while old mattresses, disused bedding, cast-off clothing, &c., deposited on vacant ground near dwelling houses not only cause much trouble to the sanitary officers but lead to much unnecessary alarm among the neighbours, who fear that they may have been got rid of owing to their having been used by some person suffering from an infectious disease. In the endeavour to stop the occurrence of these nuisances, efforts have been made to persuade the owners of the vacant plots to fence in their property and to erect notice boards cautioning the public against the practice in question, which if even not injurious to health certainly detracts from the appearance of the neighbourhood. Notices are also served on the owners to abate the nuisance by removing forthwith the deposit complained of. Even if a person is found actually depositing refuse of the description named above upon any waste or unoccupied land, the Council as the Sanitary Authority cannot at present take proceedings against the culprit, and it is very necessary that a new byelaw shall be adopted which would make such action a legal offence punishable by fine. This would be very useful in dealing with such an enemy of the public health and comfort as the man who upon several occasions during the summer deposited large quantities of fish offal, amounting to over 5 cwt. in all, upon various open spaces in the Borough. The proposed byelaws would also probably put a stop to the practice now only too common which is adopted by some tradesmen in the Borough of sweeping their shop dust and refuse into the public highway possibly a few minutes after the latter has been thoroughly cleansed by the road scavengers. As regards garden refuse, it has been suggested that the Council should undertake to remove the same after notice, and there can be no objection to this course being adopted provided that the expenses of removal and of disposal are paid for by the person making the request.

## Poultry Runs.

As was mentioned in last year's report the keeping of fowls and even ducks in back yards is a frequent source of nuisance in the Borough. It is often found that the smaller the open space at the rear of the house the greater the number of poultry which are kept. There can be very little objection to the practice if regard is paid to cleanliness, and if the yard is so extensive that the poultry runs can be placed at a sufficient distance from the house, but only too frequently owing to the limited space available the runs are placed within a few feet of the back door. Not only are the runs themselves not thoroughly cleansed each day, but the keeping of the poultry leads to the throwing into the yard of all the vegetable and other debris of the household, and this practice not only gives an appearance of untidiness, but also owing to the decay of the putrefiable material not infrequently gives rise to a nuisance. At present the only method of dealing with instances of this kind is to proceed under the nuisance section of the Public Health Acts, but I think the Council should endeavour to obtain byelaws fixing the minimum distance at which poultry runs should be placed as regards the nearest dwelling house and giving the Council power to prohibit the practice of keeping poultry in cases where in spite of frequent cautions sufficient regard is not paid to cleanliness.

### Back Passages.

The condition of many of the back passages at the rear of houses continues to give rise to complaints owing to their swampy condition after rain or to the deposit of refuse in them. In a few instances where these passages are at the rear of shops and are used in connection with the business, the attention of the Highways Committee has been called to them, and steps have been taken to have them made up under the Private Streets Works Act. In other cases, notices to cleanse and make up the passage have been served on the owners usually with good effect though, unless the several owners combine and have the passage made up as a whole, the results of each individual making up more or less properly the portion for which he is responsible are often not entirely satisfactory. Section 27 of the Public Health Amendment Act, 1890, gives the Sanitary Authority power to cleanse any such back passage which is not regularly and effectually swept and kept clear from rubbish to their satisfaction, the cost being chargeable to the several owners, and it is to be regretted that this section does not confer on the Council similar powers to make up the passage without having to carry out all the requirements of the Private Streets Works Act as regards notices, &c.

## Paving of Back Yards.

The attention of the owners of property is constantly being called to the advisability of providing more paving at the rear of houses, the notices served to this effect being generally complied with. Apart altogether from any health considerations, it is impossible for the householders to maintain their homes in a cleanly condition when immediately outside the back door the garden is in a swampy condition. The adoption of Section 25, of the Public Health Acts Amendment Act, 1907, would give the Council power to insist upon this most necessary sanitary requirement.

## General Sanitary Work.

The following table, drawn up by Mr. Whur, the Chief Sanitary Inspector, gives a summary of the work carried out under his supervision by the Assistant Inspectors during the year. The particulars given clearly show the great attention which in the Borough is paid to the supervision of the sanitation of dwellings, the condition of workplaces and the purity of the food supplies of the people, but the labour involved thereby can only be appreciated by those intimately connected with the working of a Health Department.

### SUMMARY OF INSPECTORS' WORK, 1909.

| | |
|---|---|
| Complaints received and attended to | 189 |
| Frivolous complaints | 12 |
| Nuisances abated without complaint | 706 |
| Nuisances abated on notice | 562 |
| Nuisances abated without notice | 269 |
| Number of notices served | 614 |
| Houses affected by notices | 740 |
| Notices not carried out, but being dealt with | 52 |
| Houses inspected | 2181 |

As to the Testing of House Drains.

| | |
|---|---|
| Number of houses drains tested | 289 |
| Number of houses, re-drained | 65 |
| Total length of drain re-laid and tested with water ......... feet | 2419 |
| Inspections during testing and re-testing of old drains | 5622 |
| Soil pipes tested and re-tested | 303 |
| New soil pipes provided | 3 |
| New vent shafts to drains provided | 6 |
| Old houses, drains connected to sewer | 5 |
| New intercepting traps fixed | 14 |
| New inspection chambers provided | 24 |
| New covers to inspection chambers provided | 17 |

| | |
|---|---|
| Inspection chambers rendered | 11 |
| New gullies fixed | 61 |
| New closet basins and traps fixed | 46 |
| New closet seats provided | 14 |
| New w c.'s erected | 2 |
| Improved ventilation to w.c.s | 1 |
| W.C.s, floors paved | 13 |
| New flushing cisterns provided | 11 |
| Sanitary certificates granted | 23 |

### MISCELLANEOUS.

| | |
|---|---|
| New stoneware sinks fixed | 5 |
| Sink wastes trapped | 68 |
| Bath wastes trapped | 11 |
| Lavatory basins trapped | 22 |
| New sink waste pipes fixed | 34 |
| New sanitary ashbins provided | 154 |
| New baths provided | 2 |
| New lavatory basins fixed | 4 |
| New floors to houses | 5 |
| New manure pits provided | 5 |
| Cesspools, inspections | 66 |
| Ditches cleansed | 2 |
| Notices served *re* removal of manure under section 49, Public Health Act, 1875 | 25 |
| Manure removed and charged on owners ..... loads | 6 |
| Animals buried by Health Department | 40 |
| Mattresses and beds burnt | 34 |
| Animals improperly kept removed | 4 |
| Smoke observations | 11 |
| Gipsy vans removed | 50 |
| Visits to gipsies | 90 |
| Back passages made up, houses | 20 |
| Marine store dealers' premises, inspections | 53 |
| Marine store dealers' premises limewashed | 5 |
| Brickfields refuse heaps, inspections | 24 |
| Sandpit inspections | 5 |
| Public house urinals, inspections | 127 |
| Public house urinals cleansed | 9 |
| New modern urinal provided | 1 |
| Inspections with Medical Officer of Health | 132 |
| Improved ventilation under floors, houses | 8 |
| Houses concreted under floors | 1 |
| Schools, inspection of out-offices, &c. | 104 |
| Piggeries, inspections | 4 |
| Ponds filled in | 1 |

### IN CONNECTION WITH THE INSPECTION OF HOUSES THE FOLLOWING INSANITARY CONDITIONS HAVE BEEN REMOVED, OR PUT IN PROPER STATE OF REPAIR.

| | |
|---|---|
| Cesspools emptied and filled in | 3 |
| Use of privies discontinued and filled in | 3 |

| | |
|---|---|
| Lip traps condemned | 10 |
| Wood sinks condemned | 2 |
| Rain water pipes disconnected from drain | 3 |
| Dirty closet basins cleansed | 8 |
| Defective flushing cisterns repaired | 25 |
| Defective arm joints to w.c. repaired | 13 |
| Vent pipes unblocked | 9 |
| Defective soil pipes repaired | 25 |
| Unventilated soil pipes ventilated | 1 |
| Houses not properly intercepted from sewer, intercepting traps fixed | 10 |
| Defective sink waste pipes repaired | 18 |
| Defective roofs repaired, houses | 10 |
| Defective guttering repaired, houses | 38 |
| Defective rain water pipes repaired | 16 |
| Yards paved or re-paved | 17 |
| Yard paving repaired, houses | 40 |
| Stable paving repaired | 16 |
| Stables drained | 10 |
| Blocked drains cleared on notice | 90 |
| Damp walls at back of sink cemented | 9 |
| Outside walls of houses rendered | 1 |
| Privies cleansed | 3 |
| Scullery floors paved | 2 |
| Cellar floors cemented | 4 |

### IN CONNECTION WITH WATER SUPPLY THE FOLLOWING WORK HAS BEEN CARRIED OUT.

| | |
|---|---|
| Houses connected with Water Company's mains | 5 |
| New water service to houses provided | 1 |
| Water service repaired | 2 |
| Water laid on to w.c.s | 8 |

### WITH RESPECT TO PREMISES UNFIT FOR HABITATION.

| | |
|---|---|
| Houses cleansed | 4 |
| Rooms cleansed | 28 |
| Dirty ceilings cleansed | 2 |
| Ceilings repaired | 4 |
| Rooms measured as to overcrowding | 13 |
| Overcrowding in rooms abated | 3 |

### PARTICULARS OF ENQUIRIES WITH RESPECT TO INFECTIOUS DISEASES, ALSO OF THE ARTICLES AND NUMBER OF GOODS DISINFECTED AT THE STEAM DISINFECTING STATION.

| | |
|---|---|
| Enquiries *re* infectious diseases | 290 |
| Enquiries *re* infantile deaths | 73 |
| Enquiries *re* small-pox contacts | 1 |
| Enquiries *re* cholera contacts | 6 |
| Enquiries *re* cases of pulmonary phthisis | 151 |

| | |
|---|---|
| Enquiries *re* cases of cancer | 38 |
| Enquiries for Medical Officer of Health | 41 |
| Pamphlets delivered from house to house | 6,000 |
| Houses visited *re* scarlet fever outbreak | 437 |
| Interviews | 403 |
| Houses disinfected, rooms | 553 |
| Articles removed from houses for steam disinfection | 11,820 |
| Visits to Small-pox Hospital | 8 |
| Patients removed to Sanatorium | 142 |

## GOODS DISINFECTED.

| | | | |
|---|---|---|---|
| Beds | 1296 | Dressing Gowns | 79 |
| Blankets | 856 | Dresses | 72 |
| Bolsters | 305 | Chemises | 28 |
| Pillows | 841 | Bodices | 192 |
| Pillow Cases | 73 | Drawers | 77 |
| Mattresses | 132 | Shirts | 53 |
| Sheets | 392 | Vests | 136 |
| Counterpanes | 266 | Table Cloths | 48 |
| Combinations | 24 | Toilet Covers | 190 |
| Skirts | 275 | Towels | 267 |
| Shawls | 60 | Stockings | 202 |
| Box Covers | 49 | Carpets, pieces | 231 |
| Jackets | 183 | Handkerchiefs | 189 |
| Rugs | 179 | Hats | 69 |
| Carpets | 65 | Knickers | 85 |
| Blinds | 75 | Boots | 153 |
| Valances | 47 | Books | 2194 |
| Eiderdowns | 77 | Cushions | 235 |
| Night Gowns | 129 | Coats | 106 |

Other sundry articles of clothing, &c., 1,890.

### BAKEHOUSES.

| | |
|---|---|
| Bakehouses on register, December 31st, 1909 | 42 |
| New bakehouses added to register | 2 |
| Notices served on occupiers | 3 |
| Change of occupiers | 1 |
| Underground bakehouses in use | 3 |
| Bakehouses, improved accommodation | 1 |
| Bakehouses, inspections | 289 |

### DAIRIES.

| | |
|---|---|
| Dairies on register, December 31st, 1909 | 40 |
| New applications for registration | 3 |
| New applications granted | 3 |
| (One of the new dairymen shares premises with existing dairymen). | |
| Dairies discontinued as such | 1 |
| New dairies erected | 2 |
| Existing premises converted into dairies | 1 |
| Change of occupiers | 2 |
| Notices served on occupiers | 2 |
| Dairies, inspections | 355 |

### MILKSHOPS.

| | |
|---|---|
| Shops where milk is sold other than dairies | 126 |
| Visits to above shops | 228 |
| Discovered selling milk and not registered | 23 |
| New purveyors of milk added to register | 36 |
| Persons discontinuing selling milk | 1 |
| New regulation covers provided to milk pans | 4 |
| Dirty measures discovered | 8 |
| Dirty covers discovered | 2 |
| Change of occupiers | 6 |

### COWSHEDS.

| | |
|---|---|
| Cowsheds on register, December 31st, 1909 | 6 |
| Cowsheds added to register | 1 |
| Notices served on occupiers | 1 |
| Cowsheds, inspections | 57 |

### SLAUGHTERHOUSES.

| | |
|---|---|
| Slaughterhouses on register, December 31st, 1909 | 8 |
| Notices served on occupiers | 3 |
| Slaughterhouses, inspections | 191 |
| Licence renewed to slaughterhouse | 1 |

## BOROUGH ENGINEER'S DEPARTMENT.

I am indebted to Mr. Elford, the Borough Engineer, for the following particulars relative to the year 1909.

| | | |
|---|---|---|
| Number of houses connected to public sewer | | 540 |
| Number of houses connected to cesspools | | 20 |
| Number of earth closets | | 0 |
| Number of houses in course of erection | | 321 |
| Number of habitation certificates applied for | | 560 |
| Number of habitation certificates granted | | 558 |
| Number of habitation certificates deferred | | 2 |
| Length of soil sewers laid by estate owners | yards | 433 |
| Length of storm water sewers laid by estate owners | yards | 0 |
| Length of soil sewers laid by Corporation | yards | 770 |
| Length of storm water sewers laid by Corporation, various sizes | yards | 2,558 |

# Housing of the Working Classes.

---

## Housing of the Working Classes Act, 1890.

The forty houses erected in 1902 under Part III of the Housing of the Working Classes Act are all occupied but, although no difficulty is found in obtaining satisfactory tenants, it cannot be said there is any very great demand for them when they become vacant, as upon several occasions during the year houses remained empty for several weeks. They are of two types, those of Class A contain an entrance porch, a parlour, kitchen, scullery, three bedrooms, and a bath room, and are let at 8s. 6d. per week; those of Class B contain a small entrance porch, a living room, a scullery and two bedrooms, and are let at 7s. 5d. per week. The demand for these houses has increased since 1905, when the rents were altered so as to be inclusive of rates, the rentals formerly being 6s. 9d. and 5s. 6d. respectively. The majority of the tenants are brickmakers, gardeners, labourers in regular employment, and persons engaged in similar manual work, although one or two are engaged in clerical work such as clerking, &c.

No houses were closed under Part 2 of the Act.

## House Accommodation.

Although the number of houses empty at the mid-year has steadily decreased during the last four years, it cannot be said that there is at present a deficiency in the number of houses suitable for occupation by persons of the working classes. The houses occupied by such persons may be divided into several types:—

(1) Houses apparently intended to be let to one family at a rental of from £28 to £32 per annum, but now let in tenements to two or more families, although no alterations have in the majority of instances been made to render them suitable for this purpose as, for example, the provision of separate scullery, sinks, w.c.s, suitable larders, &c. The working classes appear to prefer this mode of securing house accomodation to the renting of flats, although from a sanitary point of view it cannot be regarded as altogether satisfactory. If the landlord lets the whole house to one tenant who subsequently sub-lets portions to families, very little difficulty usually arises, as in the event of the sub-tenants proving unsatisfactory, they are promptly ejected. If, on the other hand, the upper and the lower parts of the house are let by the landlord to two tenants one or both of whom may sub-let rooms, there frequently arise complaints by one of the tenants as to the want of cleanliness on the part of the other. Occupiers of part only

of a house do not seem to take so much pride in their residence as do the tenants of small houses let to one family. Disputes constantly arise as to which of the tenants should be responsible for the passages, w.c.s and other parts of the house common to both, with the result that the cleanliness of these places is apt to suffer. The absence of suitable larders, sculleries, &c., on the upper floor cannot be considered sanitary, while friction, arising from the use by the two tenants for laundry purposes of the combined scullery and wash-house on the ground floor, tends to a want of cleanliness on the part of both. No interest is usually taken in the gardens at the rear of the house, with the result that they become the site of deposit of all varieties of refuse. There can be little doubt that many persons of the working classes in the Borough reside in houses the rental of which would in the ordinary way be much above their means, the object in doing so being to be enabled to take in visitors in the summer season; if all goes well and the season is prosperous, they are enabled to pay their way, provided part of the house can be sub-let during the winter months, and to this I mainly attribute the popularity of this type of house as a place of residence. In view of the rapid increase in number of this type of dwelling, I think it would be advisable for the Council to make byelaws dealing with houses thus let in lodgings.

(2) Flats. These are increasing in number, although for some reason or other they do not appear to be very popular with persons of the working classes. Those erected within recent years are of two types. (*a*) Flats on the ground floor and first floor respectively, each provided with a larder, scullery, water closet and a separate entrance; and (*b*) Flats on the ground floor and first floor respectively, with a common entrance, each flat being provided with larder and scullery and having either a w.c. belonging to each flat or one common w.c. approached from the upper flat by an outside staircase.

One objection to the flats as formerly constructed was the fact that, if the tenants of the upper one proved to be noisy, they interfered with the comfort of the tenants of the lower flat owing to the intervening floor not being sound proof, but the same objection obviously applies to tenement houses. Efforts are being made to persuade builders to insert in future concrete partitions between the two flats and to remedy the evil in the case of those now existing by placing slag wool or coke breeze between the floor of the upper flat and the ceiling of the lower.

(3) Small houses of four or five rooms. These either are the small houses in the older portion of the town or have been erected on a few of the more outlying building estates in Prittlewell and Southchurch. There can be no doubt that owing to the high price of land within reasonable distance of the central portion of the town builders do not care to erect houses in the Borough likely to be let at a rental of less than 9s. 6d. a week.

In the portion of the Borough west of North Road the majority of the cheaper houses erected in recent years are let at a rental of from £22 to £26 per annum; some of these are occupied as tenement houses by persons of the working classes. There have been erected on the Bentall's Estate a few smaller houses containing four rooms and a scullery, and these are let at a rental of 6s. 9d. per week. A number of flats have been erected in this part of the Borough, but are of a superior type and let at a rental of from £24 to £50 per annum.

In the eastern portion of the Borough large numbers of houses occupied by persons of the working classes have been erected in recent years upon most of the building estates as will be seen below:—

THE OAKS ESTATE, comprising Brighton Avenue, Oakleigh Avenue, Fernbrook Avenue. The houses, 140 in number, are small, containing four or five rooms and a scullery, and are let at rentals varying from 6s. 6d. to 7s. 6d. per week.

THE BELLE VUE ESTATE, comprising Belle Vue Road, Surbiton Road, Lovelace Gardens, Ilfracombe Avenue and Road, Stornoway Road, Richmond Street, Beaufort Street, Moseley Street and Glenmore Street. The houses on this estate are of a much better class, containing four, five or six rooms and scullery, and are let, some to two or more families, at total rentals varying from 9s. per week to £28 per annum. There are also on this estate about 80 flats containing three rooms and scullery with one common entrance at front and a staircase at the rear. Some of the flats are built with separate entrances, and contain four rooms and a scullery, and are let at a rental of from 6s. 3d. to 6s. 9d.

THE AVENUE ESTATE, comprising North, Central and South Avenues, the Grove, Trinity Road, Lonsdale Road and Seaforth Road. The majority of the houses contain five or six rooms and scullery and are let at rentals of from 9s to 10s. 6d. per week; many of these houses are occupied by two or more families. There are also on the estate about 32 flats, eight of which contain four rooms and a scullery, with staircase at rear, and separate entrance to each flat, while the remainder contain two rooms with kitchen and scullery combined and an entrance common to two flats.

THE PRIORY ESTATE, comprising Station Avenue, Priory Avenue and St. Mary's Avenue. The majority of the houses contain four rooms and a scullery. Forty of these are let at rentals of 5s. 6d. per week, whilst the others are let at from £18 to £26 per annum.

THE RIVIERA ESTATE, comprising Dalmatia Road, Chinchilla Road and Riviera Drive. The houses in general contain five rooms and a scullery, and are let at a rental of 8s. 6d. to 9s. per week. There are no flats on this estate.

BEAUMONT ESTATE, comprising Beresford Road, Burnaby Road, Beach Road and Arnold Avenue. The houses generally have five rooms and a scullery, and the majority are occupied by two or more families at rentals of about 6s. and 5s. per week each respectively.

MAGDALA ESTATE, comprising Queens Road, Napier Avenue, Ashburnham Road, Princes Street, Gordon Road and Gordon Place. The houses on this estate are generally let at a rental of from £20 to £28 per annum, and are usually occupied by more than one family.

MILTON HALL ESTATE, comprising Maldon Road, Great Eastern Avenue, Carnarvon Road, Harcourt Avenue, Baxter Avenue and Boston Avenue. The houses on this estate are generally let at from £20 to £34 per annum and with the exception of the first-named streets are not occupied by the working classes.

ROOTS HALL ESTATE, comprising Gossett Avenue and Colchester Road. The houses on this estate generally contain four, five or six rooms and a scullery and let at rents of from 7s. 6d. to 11s. per week inclusive. There are no flats on this estate, although the majority of the houses are let to two or more families.

## New Houses.

558 habitation certificates were granted during the year. All plans are submitted to the Buildings Committee and have to comply with the byelaws in force. The Buildings Inspectors exercise constant vigilance in supervising the building of all new dwellings.

The building byelaws require revision in certain particulars as *e.g.*, the insertion of clauses insisting upon the trapping of sink, lavatory and bath wastes and stipulating the material of which soil pipes are constructed. So long as trapping of sinks is optional as under the present byelaws, it is hopeless to expect builders to carry out this requirement when erecting houses intended for immediate sale, though they are aware that within a few years notice to trap such wastes will almost certainly be served upon the owners by the Sanitary Inspectors when the occurrence of a nuisance arising from the defect necessitates this action. Similarly as regards soil pipes, in these days of competition between builders, it constantly happens that rain water piping caulked with red lead or even putty is used in lieu of lead or heavy cast iron pipes caulked with lead, and though smoketight at the time of the erection of the building quickly becomes defective.

New clauses should also be inserted regulating the construction of flats so as to secure a noise-and fire-proof partition between the flats on the ground and first floors respectively.

Although at the time of erection of new buildings, the Buildings Inspectors see that the air space required by the byelaws is provided at the rear of dwelling houses, it is not uncommon to find later that this space has been encroached upon by the erection of sheds, poultry houses, &c. These structures are put up gradually and in stages and, unless detected within six months of their erection, it is impossible, I understand, to take summary proceedings against the offenders, the only method of obtaining removal being by recourse to the High Court although obviously it ought to be possible for the Council to proceed summarily against the owner at any time if it is discovered that the air space has been encroached upon. Similarly as regards the secondary means of access to houses, instances have come under notice where the back passages shown in the plans have been later absorbed into an adjoining building plot, although no difficulty usually arises in dealing with these cases as they are generally quickly detected by the Council's employees engaged in the collection of house refuse.

It is a matter of regret that the wash-house accommodation provided for most of the houses is so insufficient. In the majority of residences the copper is placed in the scullery with the result that the offensive smell from it is apt to pervade the whole house; in some of the houses in order to get over this objection the scullery is detached from the rest of the dwelling house, although this must be a source of considerable inconvenience to the tenants. The sufficiency of wash-house accommodation is the more important in view of the rapid increase during recent years of houses which are let to two or more families as I am convinced that the difficulties which arise and the friction caused when the tenants of the upper rooms use the copper in the scullery on the ground floor account for some of the want of cleanliness so often found in the families who reside in these tenement houses.

It is found that although nearly all the houses now being erected are being provided with baths, the latter are seldom used for the purpose intended except in the better class dwellings; this applies particularly to baths placed in the scullery, while if a separate bathroom is provided it is, more frequently than not, utilised as a bedroom in the summer months and as a slop sink, receptacle for dirty clothes, &c., during the rest of the year.

The larders which in the older houses were frequently unventilated cupboards under the stairs are now generally placed on an external wall and provided with a window or air brick, but clauses should be inserted in the byelaws insisting upon this being so in all cases.

## Town Planning.

There are no slums and only one back-to-back house in the Borough. There are very few enclosed courts, and the majority of the houses have a garden of fair size at the back. At the same time it must be noticed that in the newer portion of the Borough there have been erected within recent years rows of houses the backs of which are only separated from those of the houses in adjoining streets by little more than the width of the airspaces required by the Byelaws, the depth of the building plots having evidently been too small to allow of sufficient garden space. Not only is this so, but there is a marked tendency to build outbuildings such as dairies, stables, &c., behind dwelling houses upon the small area of ground intended to be used as a garden and thus cause further congestion of the site. In these cases it is usual for the stable, &c., to be built as far away as possible from the dwelling house occupied by the owner and consequently as near as possible to the residences of one or more of his neighbours who soon complain of the nuisance arising from its proximity. A walk through the western portion of the Borough which has all been built within the last ten years will afford convincing evidence that the Housing and Town Planning Act has come too late, and that, as regards a large portion of the area, the opportunity has been lost of erecting a town planned in the light of the past experience of other towns. In these days when the necessity for a sufficiency of open spaces round dwelling houses is preached by all and sundry, it is astonishing to find that there are in course of erection at the present time houses likely to be let at a rental of from £40 to £50 per annum and yet unprovided with a garden or indeed a back yard of sufficient size to be of much practical use.

With the exception of a few detached houses or rows of houses, it may be said that approximately three-fifths of the area occupied by the Borough has not yet been built upon, but, of this, several large estates have already been divided up into building plots, many of the proposed roads being also marked out, and isolated houses having been erected. These plots have been sold to very numerous owners, certainly many hundreds in number, and apart from any other considerations an attempt to apply the Town Planning Act to these areas would be fraught with almost insuperable difficulty. On the other hand there remain several estates, each still belonging to one or two owners, which have not yet been developed as building sites, although within very few years it is almost certain that they will be built upon. These are obviously the only portions of the town to which the town-planning principle can now be successfully applied, and the Committee has instructed its officials to consider the application of the Act to the Borough with a view to prompt action being taken.

It is very noticeable that in many parts of the Borough properties of very different value have been erected in the same area, although possibly the latter may be of small size; it is not uncommon to find even in a single street that the houses at each end are detached villas and of large size, while those in the middle of the street are much smaller and arranged in terraces. In this way not only is financial loss incurred by many of the individual owners of the good property first erected, but also there follows a rapid deterioration of the neighbourhood, the large houses having subsequently to be let in tenements. The majority of the new houses erected in the past few years have been built in terraces, with the result that not only do the roads appear unnecessarily monotonous but the secondary means of access has to be provided of the type of a back passage of considerable length, and this being common to many owners is a frequent source of nuisance from its muddy condition and from the deposit of rubbish thereon. Latterly there has been a tendency to erect semi-detached villas with side passages, and it is to be hoped that in the future the majority of new houses will be of this type.

## Sanitary Condition.

Particulars of defects found on inspection of houses are to be found on an earlier page. Generally speaking it may be said that the houses are in a good state of sanitation and fit for habitation. House-to-house inspections are made each year of the houses in the poorer portions of the town, several of the streets, houses in which are known to be inhabited by dirty families, being visited several times. The drainage of a large number of houses continues to be re-tested each year, but doubtless as a result of the great attention which has been paid to this aspect of sanitary administration in the past, the majority of defects now found are of a minor character. The older houses in the Borough receive special attention especially the old cottages off the Marine Parade and those at Bournes Green and Prittlewell; frequent repairs have to be carried out to make some of this old property habitable. Many of these old houses appear from the exterior to be very dilapidated, though more careful examination shows them to be free from damp, and very clean and cosy when viewed from the interior. The occupiers have acquired a great affection for their dwellings, and when they cease to be habitable will leave them with regret.

The more frequent visits to the homes of the school children which have followed the initiation of the work of routine medical inspection have shown that many of these houses as in other towns are in a most deplorable condition as regards cleanliness. Poverty alone does not account for this as many of the homes of the extremely poor will compare in cleanliness with any of the dwellings of the middle classes. That the state of the house as regards dilapidation, &c., has little or no influence is shown by the fact that many of the dirtiest homes are found to be in some of the newly erected houses in the Borough. The only possible explanation is that the condition is due to the laziness, neglect, and low standard of cleanliness of many of the women-folk. Not only are the homes in these cases dirty and neglected, with unwashed and verminous bedding, but the children and the women-folk themselves are untidy and sadly lacking in personal cleanliness. Experience seems to show that once a woman so degenerates as to allow her home to become neglected, it will in many instances continue to be more or less so, notwithstanding frequent changes of address, the result of notices to cleanse the premises served on the owner of the house by the Sanitary Inspectors. Much greater attention is now being paid to the cleanliness of children while at school, and it is possible that this may have an indirect effect upon their homes ; at any rate it is to be hoped that they will, when in turn they become the parents of the next generation, have a higher standard of cleanliness than many of the mothers of to-day.

## House Refuse.

### Collection of House Refuse.

The Town Council undertakes the collection of house refuse, and for this purpose the Borough is divided into five districts, each of which is cleared once weekly; hotels, boarding houses, &c., are cleared twice weekly during the winter and three times weekly during the summer months. On the average thirty-two men with sixteen horses and vans or carts are employed each day on this duty, with an average daily collection of forty-five loads. The vans, six in number, carry from three to four cubic yards, while the twelve carts have each a capacity of about two cubic yards; the latter are employed principally for collections from houses in roads where the use of vans would be inconvenient; all the vehicles are provided with covers or with tarpaulin so as to prevent dust, &c., being blown about.

## Disposal of House Refuse.

At present the refuse is deposited at various tips in situations as far as possible removed from neighbouring houses, either in outlying districts in the Borough or in the adjoining rural districts; the greater quantity is taken to brickfields. During the winter months the material, being of considerable calorific value, is appreciated by the owners of brickfields, and apart from the labour involved in conveying it along the very bad roads which lead to the shoots there is no great difficulty in thus disposing of it. During the summer, however, when house refuse is particularly apt to be a nuisance, it is of little value as combustible material, and consequently there is greater difficulty in getting rid of it; moreover, the distance of the tips from the town, especially of those outside the district, leads to great expense through cartage.

The difficulty in finding suitable tips led the Council in 1902 to decide upon erecting a Dust Destructor, the necessity for which had been impressed upon them as far back as 1895 by Dr. Clough Waters, then Medical Officer of Health. The site proposed was on land adjoining the Corporation Depôt, in the rear of London Road, but objection having been raised by owners of surrounding property the matter remained in abeyance until 1905, when application was made to the Local Government Board for sanction to the borrowing of £10,000 for the purpose. Local opposition to the site, however, being made at the enquiry, sanction to the proposed loan was refused until settlement of litigation then pending against the Corporation in respect of a nuisance which it was alleged arose from the neighbouring Electricity Works; this matter was, however, satisfactorily settled in December, 1907, an undertaking being moreover given that the proposal to erect a Destructor on the site in question would be abandoned. In January, 1908, the Council resolved that application be made to the Local Government Board for sanction to the borrowing of £11,000 for the erection of the proposed Destructor on a portion of the land to be acquired for the new sewage works. The necessary inquiry was held by one of the Board's Inspectors in May, 1908, but the necessary sanction was not obtained until October, 1909, the Board doubtless awaiting the passing by Parliament of the Corporation Bill dealing with the sewerage scheme.

There can be no question that the erection of a Dust Destructor is a matter of very considerable urgency. The finding of suitable tips has become an extremely difficult matter, while the great distance to which the refuse has to be carted makes the collection and disposal of the house refuse a very expensive item. For engineering reasons connected with the construction of some of the sewage disposal works on a site adjoining that proposed for the Dust Destructor, it is improbable that the latter will be ready for use for fifteen or eighteen months at least, though the work will be undertaken as soon as practicable.

The collection in a health resort of house refuse once only each week cannot be looked upon as satisfactory. It is doubtless true that if each householder burnt in the kitchen fire all animal and vegetable refuse and used the ash bins solely for ashes and dust the nuisance arising therefrom would be considerably diminished, even under the present arrangements. It is, however, to be remembered that where gas stoves are in use there is frequently no kitchen fire where such refuse can be consumed, and this is especially apt to be the case during the summer months, when the deposit of putrescible matter in the bins is particularly liable to cause offence. It is consequently not surprising that the constant requests made in this direction by the Inspectors and by the Dust Collectors are without avail. Many of the ashbins, moreover, are placed much too near the dwellings, and although we insist upon the provision of sanitary bins with proper covers, the latter are seldom kept in position, so that the refuse becomes sodden with rain and thus more quickly putrefies. With the erection of a Dust Destructor it is hoped that the Council will see their way to provide for the removal of house refuse from every dwelling in the town twice a week throughout the year, and during the summer months on alternate days at least. In the central portions of the Borough it might be advisable to provide during the height of the season for a daily collection as is carried out I understand at several other seaside resorts; more particularly is this necessary in connection with restaurants, and similar business premises where large quantities of putrescible material are apt to accumulate, and it is hoped that some arrangement will be made whereby the Corporation will undertake to remove daily from shell-fish shops all waste material such as oyster shells, &c., and thus put a stop to the practice of the occupiers of the shops depositing the litter on the foreshore.

### The Proposed Destructor.

Half an acre of the site of the new sewage treatment works at Prittlewell has been allocated for the erection of the Destructor, which will thus be at least half a mile from any populous portion of the Borough. The Destructor will consist of six cells, each with a minimum capacity for dealing with ten tons per twenty-four hours; there will be three hoppers, two water-tube boilers, an economiser, a dust arrestor, and two regenerators, together with a chimney shaft one hundred feet high. The Borough Engineer estimated the total cost at £11,000, allocated as follows:—Land, £100; buildings, including tipping platform, £2,750 19s. 2d.; inclined roadway, including stores, £821 14s. 6d.; chimney shaft, £1,033 5s. 4d.; destructor cells, water tube boilers, flues, economiser, &c., £5,800; and contingencies, £494 1s.

## Sewerage and Sewage Disposal.

In the case of a few old houses situated in an outlying portion of the Borough, pail closets are in use but, apart from this, the water-carriage system is adopted throughout the Borough.

The extension of the Fairfax Drive Sewer, a loan of £1,215 for which work was sanctioned in September, is being rapidly proceeded with, and its completion in three months' time will allow of the abolition of the very unsatisfactory cesspools at present in use in connection with the houses between Leigh Road West and Fairfax Drive.

The Bill, enabling the Corporation to acquire lands for and to construct additional sewerage and sewage disposal works, with clauses affording protection to the Council as long as the effluent from the works complies with certain standards, passed through both Houses of Parliament and received the Royal assent in August last. The several contracts have been entered into and the work, which it is estimated will take three years to complete, is in progress.

At present the sewage is discharged untreated into the enormous bulk of tidal water in the Estuary during the first four hours of ebb tide, by means of an outfall 1,800 yards from high water mark, and situate 530 yards east of the Pier.

The new scheme involves an estimated expenditure of £160,000, and is sufficient, so far as the main sewers are concerned, for a population of 150,000, while the sewage disposal works to be erected will suffice for 100,000 inhabitants, a proportionate number of visitors being allowed for in each case. Provision is made for the construction of several miles of deep sewers, a pumping station, detritus and septic tanks, percolating filters, and a new outfall sewer to discharge into the Thames Estuary, the mouth of the outfall being about one and a half miles below high water mark and 150 yards below low water mark.

## Common Lodging Houses.

There are no registered Common Lodging Houses in the Borough, but efforts are being made to obtain the registration of premises which in my opinion belong to this category.

## Offensive Trades.

Byelaws in connection with the carrying on of Offensive Trades are in force in the Borough, but only one such trade is at present established within the area, viz., that of bone and fat boilers. The premises are of suitable construction in view of the present dimensions of the business, and the provisions of the byelaws are being observed.

The only other premises where trades of an "Offensive" character are carried on in the Borough are rag and bone dealers' stores, and places of this description are unfortunately increasing in number. The clauses in the byelaws which refer to these premises are concerned with the maintenance of cleanliness, &c., of the stores of a "dealer in rags and bones," and some of the traders maintain that the byelaws do not apply to them as they deal in rags only. In spite of this, frequent inspections show that these premises are on the whole well kept, and that the requisite lime washing is carried out at the regular intervals enjoined.

## Slaughterhouses.

There are eight slaughterhouses in the Borough, of which six are registered and two licensed; one of the latter was erected at the end of 1908, and the licence is subject to annual renewal in accordance with Section 29 of the Public Health Amendment Act, 1890. All the slaughterhouses are small, and some of the older ones are becoming more or less dilapidated, though on the whole their condition may be said to be fair. One of the slaughterhouses is used by two firms of butchers, one of whom does a wholesale trade, with the result that owing to the small size of the building there is insufficient accommodation for the amount of slaughtering carried on; apart from the inconvenience which results during killing, the carcases are found upon visits of inspection to be hanging up so close together that efficient examination of the meat is almost impossible, the difficulty being increased during the winter months owing to the imperfect means of artificial lighting.

The slaughterhouses are situated in various parts of the Borough at considerable distances apart, and this leads to the proper supervision of the meat supply being rendered impossible. During the year 191 visits of inspection have been made by Assistant Sanitary Inspector Penn, who acts as Meat Inspector, and the premises have usually been found to be properly and cleanly kept. Three notices have had to be served, viz., two calling upon the occupier to lime whiten the premises, and one relating to a blocked drain.

So long ago as 1906 the Southend and District Meat Traders' Association petitioned the Council for the erection of a Public Abattoir, but the matter has hitherto remained in abeyance. It must be admitted that owing to the very rapid increase in the population the facilities for slaughtering are not sufficient to meet the demands, and this results in the small slaughterhouses at present in use being frequently overtaxed.

The establishment of a public abattoir would unquestionably enable meat inspection to be much more effectively carried out, and would prevent the present undesirable overcrowding of the small slaughterhouses. On the other hand it has to be remembered that only a portion of the town's meat supply is killed in the Borough; the greater part of the beef comes from the London markets, and this will doubtless continue to be so as by this means butchers are enabled to purchase those portions only of a carcase for which there is a demand in their particular business; many animals are slaughtered either at the farmhouses in the neighbourhood where the animals are purchased or in private slaughterhouses belonging to the respective butchers situated outside the Borough. The local butchers seem confident that a municipal abattoir could be run at a considerable profit to the rates, but, unless the use of the present registered and licensed slaughterhouses in the Borough was discontinued, and butchers refrained from killing at neighbouring farmhouses or in their private slaughterhouses in the surrounding rural districts, I consider the carrying out of the proposal could only result in financial loss. In view of the small proportion of the meat supply which is now killed in the Borough, it is indeed doubtful whether under present circumstances the expense of erecting an abattoir could be justified on public health grounds in that it would afford a better opportunity for efficient inspection of the meat supply of the inhabitants. The whole question really depends on the terms upon which the butchers would be allowed to use the abattoir, and what compensation they would require for the closure of their present slaughterhouses. If it became necessary owing to the initial costs of erection, compensation, &c., to charge other than a very low rental, I am of opinion that the majority of butchers would resort to places outside the Borough for slaughtering purposes. On the other hand if a very low charge was made for the accommodation afforded, the question being approached from the point of view solely of the public health, I am equally certain that all the reputable butchers in the Borough would avail themselves of the facilities provided, indeed their failure or neglect to do this might well be assumed by the public to be due to their desire to avoid efficient meat inspection.

## Public Mortuary.

The present public mortuary is situated in the water tower at the Corporation Depôt, and cannot be considered suitable for the purpose. Not only have post mortem examinations to be made in the mortuary itself under very inconvenient conditions, but all the bodies lying in the room are visible to the relatives of any of the deceased when they come to identify a body, as also to the jurymen when they view one of the bodies prior to an inquest. There should be a mortuary, a separate inspection room and a post mortem room, and as it will be difficult to alter the present accommodation it may be necessary to erect a new building.

# SUPERVISION OF FOOD SUPPLIES.

---

## The Dairies, Cowsheds and Milkshops Order.

As has been pointed out in previous Annual Reports, the great bulk of the milk consumed in the town is supplied either from dairies situated in the rural districts outside the Borough or by wholesale dealers in the Metropolis. More especially is this true in the summer months when owing to the large number of temporary residents, the quantity of milk consumed is greatly increased. As a result the Town Council as the Sanitary Authority has very little control over the conditions under which the milk is produced, although the distribution of the milk is under constant supervision by the Inspectors.

There are seven registered cowsheds in the Borough; all are in a fair state of repair, and the provisions of the regulations are fairly well observed. 57 inspections were made by the Inspector, in addition to the visits paid by myself. One notice with reference to defects in paving was served, and this was duly complied with. Although some provision is in all cases made to enable the person milking the cows to wash his hands and if necessary the udder of the cow before commencing operations, constant supervision is needed to see that this is done. It is a matter of regret that in some of the cowsheds care is not at all times taken by the proprietor to see that these precautions are being observed; upon one of my visits to a cowshed during the year I found that the milker's hands and fingers were encrusted with dirt except on their palmar aspect, which had been in contact with the teats and having become wet through the splashings of the milk had become cleansed thereby. The proprietor was cautioned that any similar infringement of the regulations would be followed by legal proceedings, and subsequent inspections have shown no further cause for complaint. At four of the cowsheds efficient apparatus is provided for the immediate cooling of the milk. One of the cowkeepers has all his animals tested with tuberculin immediately after purchase, but the Council has taken no action in causing dairy cows in the Borough to be examined by a veterinary surgeon.

There were 40 dairies on the register at the end of the year; two new dairies were erected, the plans before being approved by the Buildings Committee being submitted to the Health Department in order to ensure that all requirements necessary to render the buildings suitable for the purpose were complied with. 335 visits of inspection were made by the Inspector, and two notices as regards defects were served, one dealing with the habitually dirty condition of a dairy, the other to defective paving. In two of the dairies the milk is pasteurized during the hot weather before being sent out to customers.

There are 126 milk shops on the register, of which 36 appeared on the register for the first time, but as 13 discontinued business the number of such premises is 23 more than in 1908. 23 instances of unregistered persons keeping milk shops came under notice during the year, and as it appeared probable that the fact that registration was compulsory was not so generally known as it should be, advertisements to this effect were in April inserted in the local press as required by Section 6 of the Milkshops Order. On the whole the premises are kept in a satisfactory condition, although upon eight occasions the measures or cans were found to be dirty. The provision of the regulation that every vessel containing milk for sale shall be kept properly covered and protected from contamination by dust and flies is rigorously enforced, and every milk retailer is required to provide a proper counter-pan with an approved metal cover. Many of the milk dealers are in a very small way of business so far as the milk trade is concerned; many of the premises are small general shops where grocery, provisions, vegetables, fish and even oil are stocked, the milk being sold merely to prevent the customers for the latter articles being subjected to the slight inconvenience of having to resort to a properly constructed dairy perhaps only a few yards away. As in the vast majority of instances these milk shops do not satisfy any real public need every endeavour is made to dissuade these small traders from continuing to supply milk if the other goods sold are of the nature above mentioned.

## The Meat Supply.

Assistant Inspector Penn, who holds a Meat Inspector's certificate, paid during the year 191 visits to the registered slaughterhouses, and 59 visits to the butchers' shops in the Borough. The slaughterhouses were as far as possible visited at times when slaughtering was in progress, but owing to their scattered positions efficient meat inspection is difficult to carry out.

In seven instances meat unfit for food, discovered hanging up in the slaughterhouses ready for despatch to the butchers' shops, was on request voluntarily surrendered by the meat trader for destruction, and in one instance portions of a pig's carcase were seized and taken before a magistrate for condemnation. The meat voluntarily surrendered was as follows :—

Cow's heads (tuberculous), 2 instances.
Cow's lungs, livers, &c. (tuberculous), 4 instances.
Caseous mass surrounding kidney (? tuberculous), 1 instance.

Upon a visit to a slaughterhouse in October, the tuberculous viscera of a pig were found hanging up among the sound meat; there were no carcases on the premises, but enquiry showed that twelve pigs had been slaughtered two days previously and had been sent to various butcher's shops in the Borough.. Visits were paid to all these, but in the intervening period most of the pork had been sold; exposed for sale on the window stall in one shop, however, there was found a pig's head obviously tuberculous. This was seized, as also were the diseased viscera (lungs, spleen, liver, &c.) found in the slaughterhouse, and upon being inspected by a magistrate they were condemned and subsequently destroyed. By order of the Health Committee a prosecution was instituted for exposing for sale the diseased pig's head, and a conviction was obtained, the penalty imposed being 40s. and 4s. costs.

## The Fish Supply.

One hundred and seven visits have been paid to the various fish shops, particular attention being devoted to those which sell fried fish. No unsound fish was detected, and the premises are generally found to be clean and free from offence. In one instance the use of a shop not suitably constructed for the business caused a most intolerable nuisance and resulted in numerous complaints from residents in the neighbourhood. The trader was required to provide suitable fittings, all woodwork upon which fish was deposited being replaced with slate or marble slabs, with the result that the conditions were very much improved.

In June I received a complaint from the Fishmongers Company that some cockles purchased in the Borough by one of their Inspectors had been found upon bacteriological examination to be "insufficiently cooked and dangerously polluted." Enquiry showed that the apparatus in use had become defective through long use and that the time allowed for cooking was insufficient to ensure safety. By the direction of the Health Committee I communicated with all the cockle-boilers and shell-fish merchants in the Borough, calling their attention to the need for the more prolonged cooking of cockles. A letter on the subject was also sent to the Medical Officer of another Sanitary Authority, from whose district cooked cockles are supplied to the Borough, inviting his co-operation in securing uniformity of action in the matter.

## Fruit and Vegetables.

Ninety-seven inspections were made of fruit shops, stalls, &c. Three pounds of cherries which had become unsound were voluntarily surrendered by a stall holder on demand, as also were some damaged strawberries on two occasions. Although the shops themselves are almost invariably maintained in a state of cleanliness, the same cannot be said of the yards attached thereto in which the empty boxes and baskets, the unsound fruit, vegetable refuse, &c., are deposited. Constant attention has to be devoted to this prolific source of nuisance, as not only does the accumulation of putrefiable material lead to most offensive smells, but the treading into the mud of decaying cabbage leaves, rotten fruit, &c., tends to make the conditions less easy to remedy.

Being a popular seaside resort visited during the holiday season by thousands of visitors and excursionists, the town during the summer months is invaded by numerous street hawkers and costers who sell fruit from baskets and barrows in the public streets. At night such fruit may be stored in bedrooms and other unsuitable places, for example, in one case which came under observation during the year a stable was being used not only for its proper purpose, but also as a store place for fruit. I think that public opinion on the necessity for cleanliness not only in the production but also in the storage and distribution of food has sufficiently advanced to justify local authorities asking to be granted some powers of control over street hawkers who deal in fruit and other edibles, and for this purpose it would be advisable that registration should be required, and that there should be granted to the Officers of the Sanitary Authority the right of entry to inspect the store places, &c.

## Ice Cream.

A considerable quantity of ice cream is consumed in the Borough during the hot weather. The majority of the street vendors obtain their supply from a wholesale dealer in the town who produces ice cream under good conditions, but in a few cases the manufacture is carried out by the vendor himself at his own home where the surroundings are not so satisfactory. Powers of inspection of premises in which ice cream is made or stored should be conferred on the Council in the same way as has been done in several large cities. Many of the small vendors hire one small bedroom when they arrive in the Borough at the commencement of the season and there is reason to believe that they use this room not only as a sleeping place but also as the store place for any ice cream which remains unsold at the end of each day, and this cannot be regarded as satisfactory.

## Restaurant Kitchens.

These are referred to in the section dealing with the Factory and Workshops Act.

## Sale of Food and Drugs Act.

The Borough not either being a County Borough or having a separate Quarter Sessions, the administration of these Acts rests with the Essex County Council, to whose Inspector, Mr. H. C.

Card, I am indebted for the following particulars of action taken in the Borough during the year.

| | Samples taken and submitted to the Public Analyst. | Genuine. | Adulterated. |
|---|---|---|---|
| Butter ............... | 22 | 21 | 1 |
| Lard ..................... | 7 | 7 | — |
| Coffee .................. | 10 | 10 | — |
| Milk ..................... | 19 | 18 | 1 |
| Skimmed Milk ...... | 1 | — | 1 |
| Margarine ........... | 1 | 1 | — |
| Cream ............... | 5 | 2 | 3 |
| Sweets ............... | 3 | 3 | — |
| Whisky ............... | 2 | 2 | — |
| Pearksown ........... | 6 | 6 | — |
| White Pepper ......... | 2 | 2 | — |
| Bread ................. | 5 | 5 | — |
| | 83 | 77 | 6 |

PROSECUTIONS AND CAUTIONS.

| Article. | Offence. | Fine. | Costs. |
|---|---|---|---|
| Milk......... | 7 per cent. of added water .................. | 10/- | 4/- |
| Skim milk | 2½ per cent. deficient in total solids ......... | £1 | 4/- |
| Butter ...... | All margarine .................................... | £1 | 4/- |
| Pearksown | Unmarked wrapper .......................... | 10/- | 4/- |
| Cream (3) | Boric acid preservative.—Cautioned. | | |

The cream samples noted as adulterated contained boric acid preservative in a proportion not exceeding that which the Departmental Committee recommended be allowed, provided notice of the presence of the boric acid was given to the purchaser at the time of purchase. In these three cases the notice was not given and the vendors were cautioned on that account.

Samples have apparently been taken at the rate of 1.3 per 1,000 inhabitants, whereas the rates for the London Boroughs and for the country generally work out at a little over 2 and about 4.5 per 1,000 inhabitants respectively. In Blackpool, a town of similar size and character to Southend-on-Sea, but having the administration of these Acts under the control of the Town Council, more than twice as many samples are taken each year.

Not only is the total number of samples taken in the Borough unduly low, but the number of milk samples examined cannot be considered sufficient. A great number of invalids and delicate children reside in or visit the Borough for the benefit of their health, and hence it is of the utmost importance that the unusually large quantity of milk consumed in consequence should be above suspicion as regards purity and cleanliness.

The following table gives particulars of the samples examined each year during the last decade, and it will be seen that the number of milk samples taken in 1909 is much below the average of previous years in spite of the increased population.

| YEAR | Population | Total Samples | Rate per 1000 Population | Samples of Milk | Samples of Butter |
|---|---|---|---|---|---|
| 1909 | 61,268 | 83 | 1.3 | 20 | 22 |
| 1908 | 57,399 | 79 | 1.3 | 30 | 26 |
| 1907 | 53,283 | 103 | 1.9 | 55 | 10 |
| 1906 | 50,302 | 97 | 1.9 | 70 | 26 |
| 1905 | 46,380 | 85 | 1.8 | 34 | 39 |
| 1904 | 41,944 | 26 | .6 | ? | ? |
| 1903 | 37,283 | 62 | 1.7 | 40 | 6 |
| 1902 | 33,537 | 60 | 1.8 | 30 | 10 |
| 1901 | 29,793 | 66 | 2.2 | 26 | 16 |
| 1900 | 27,721 | 54 | 1.94 | 18 | 6 |

## Water Supply.

The Southend Water Works Company which supplies the Borough and some of the surrounding rural districts obtains its water from deep wells sunk into water-bearing strata, generally the chalk, underlying the London Clay. The wells, 20 in number which, with two exceptions, are all situated in the open country away from all possible source of contamination, are admirably constructed and efficiently protected against the possibility of pollution. Pumped from the wells, the water passes either into one of the four large covered reservoirs or in the case of the wells nearer the town direct into the main. It is of a high degree of purity judged both by chemical and bacteriological standards; samples are examined at regular intervals at the Borough Laboratory, and also independently by a water expert acting on behalf of the Water Company. The results obtained are remarkably constant, and the following may be taken as typical :—

| | Parts per 100,000 |
|---|---|
| Free Ammonia .......................... | .003 |
| Organic Ammonia ........................ | .002 |
| Chlorine .................................. | 24.9 |
| Nitric Nitrogen .......................... | .05 |
| Nitrites .................................. | absent. |
| Hardness. Total ........................ | 11° |
| Oxygen absorbed at 98° in 3 hours... | .01 |

The water from each of the wells has during the year been subjected to several bacteriological examinations by Dr. Thresh, the County Medical Officer, in addition to those made by myself of the water supplied to the Borough. The results show the water to be of excellent quality and free from any suspicion of contamination.

The supply throughout the year has been constant and, beyond those temporary and localised interruptions necessitated from time to time by the exigencies of working, there have been no intermissions in the service. One complaint only was received during the year, and had reference to the presence in the water of minute living animalcule, which proved on examination to be a somewhat uncommon variety of water worm differing slightly from the anguilula. They had evidently got into one of the mains from their normal habitat—moist earth—but prompt flushing removed all further cause for complaint.

On the average 22.46 gallons per day are supplied by the Company for each person resident in the area in which they have mains; it is probable that there is extremely little wastage through defects in the mains, &c., and this would account for the relatively small consumption.

The Manager and Secretary of the Company, Mr. Bilham, to whom I am indebted for some of the above facts, is ready at all times to afford me any information I require, and I desire once more to take the opportunity of recording my obligation for his generous assistance and invariable courtesy.

## PROSECUTIONS.

1. Exposing a diseased pig's head (tuberculous) for sale. Fined 40s. and 4s. costs.

2. For exposing in a public street without taking proper precautions, a child of whom she was in charge, and who was suffering from scarlet fever. Fined 5s. and 4s. costs. The defendant had arrived in the Borough one Sunday afternoon, and her child being ill she consulted a doctor, who informed her that the disease was Scarlet Fever, and cautioned her against exposing the child. In spite of this, the mother promptly returned by train to London, taking the child with her.

## SUMMARY OF IMPROVEMENTS, 1909.

Sewerage Bill received the Royal Assent and works commenced.

Extension of the Fairfax Drive Sewers.

Loan sanctioned for the erection of a Dust Destructor.

Completion of New Ward Pavilion at the Borough Sanatorium.

Erection of new public urinals and improvements in those attached to licensed premises.

## Improvements still required.

The making up of many of the new streets and some of the back passages.

More frequent collection of house refuse, especially from restaurants, boarding houses, &c.

More active measures against Tuberculosis, particularly as regards voluntary notification, compulsory power of disinfection in the case of infected rooms let as apartments, the prohibition of spitting in the public streets, &c.

More isolation accommodation at the Borough Sanatorium.

The daily cleansing during the summer season of the Public Shelters, Seats, &c.

The erection of a Public Abattoir.

Powers of inspection of the store places used by fruit hawkers, ice cream vendors, &c.

Improved Byelaws relating to tents, van dwellers, &c.

Revision of Building Byelaws.

The adoption of certain sections of the Public Health Acts Amendment Act, 1907.

Byelaws relating to the keeping of poultry.

Byelaws as regards Houses let in lodgings.

The taking of more samples of milk.

# Factory and Workshop Act 1901.

# FACTORY AND WORKSHOPS ACT, 1901.

By the provisions of Section 132 of the Act, the Medical Officer of Health is required in his annual report to "report specifically on the administration of this Act in workshops and workplaces, and to send a copy of his annual report or so much of it as deals with the subject to the Secretary of State." The statistics are given in the following table in the form required by the Home Office.

## 1.—INSPECTION.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS OR INSPECTORS OF NUISANCES.

| Factories | No. of Inspections. | No. of Writren Notices. | No of Prosecution. |
|---|---|---|---|
| Factories (including Factory Laundries)... | 43 | 6 | — |
| Workshops (including Workshop Laundries) | 506 | 10 | — |
| Workplaces (other than Outworkers' premises included in Part 3 of this report) | 287 | 1 | — |
| Total .................................... | 836 | 17 | Nil. |

## 2.—DEFECTS FOUND.

| Particulars | No. of defects found. | No of defects remedied. | No. of defects referred to H.M Inspector |
|---|---|---|---|
| *Nuisances under Public Health Acts.* | | | |
| Want of Cleanliness ........................ | 5 | 5 | — |
| Other Nuisances .............................. | 7 | 7 | — |
| Sanitary Accommodation— | | | |
| Insufficient .......................... | 1 | 1 | — |
| Unsuitable or defective ........... | 4 | 4 | — |
| Not Separate for sexes ........... | — | — | — |
| *Offences under the Factory and Workshop Acts* ............................................ | 1 | 1 | 1 |
| Total .......................... | 18 | 18 | 1 |

(Section 22 Public Health Acts (Amendment) Act, 1890, is in force).

## 3.—HOME WORK.

| | |
|---|---|
| Lists received from Employers— | |
| Twice in the year .................................................... | 10 |
| Once in the year .................................................... | 10 |
| Address of Outworkers on Lists received from Employers ..................... | 42 |
| Addresses of Outworkers received from other Councils ........................ | 11 |
| Addresses of Outworkers forwarded to other Councils ............................ | 15 |
| Inspection of Outworkers' premises ........................................................ | 31 |
| Outwork in Infected Premises, instances .......................................... | Nil. |
| Prosecutions ................................................................................. | Nil. |

## 4.—REGISTERED WORKSHOPS AND WORKPLACES.

| | |
|---|---|
| Workshop Bakehouses | 39 |
| Workshop Laundries | 9 |
| Domestic Workshops | 22 |
| Other Workshops | 114 |
| Total number of Workshops on register | 184 |

## 5.—OTHER MATTERS.

| | |
|---|---|
| Matters notified to H.M. Inspector of Factories— | |
| Failure to affix Abstract of the Factory and Workshops Act (sect. 133) | 1 |
| Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshops Act (s. 5)— | |
| Notified by H.M. Inspector | 5 |
| Reports (of Action taken) sent to H.M. Inspector... | 5 |
| Underground Bakehouses (s. 101)— | |
| In use at the end of the year | 3 |
| Number of Factories under the Inspector of Home Office | 50 |
| Circular letters sent by Medical Officer of Health to likely employers of labour *re* Outworkers | 178 |
| Communications received from employers of labour | 19 |
| Notices received from Home Office *re* new workshops or change of occupants | 40 |
| Nuisances detected by H.M. Inspector and reported to Medical Officer of Health | 5 |
| Workshops measured as to cubic space, lighting, ventilation, &c. | 29 |
| Workshops, including Bakehouses, limewashed | 82 |

### Factories.

Southend-on-Sea being essentially a residential town and health resort rather than an industrial town, there are no large factories within the Borough. H.M. Inspectors are mainly responsible for the administration of the Act as regards factories, but during the year 43 inspections of the fifty factories in the Borough were made by the Sanitary Inspectors.

Nuisances remediable under the Public Health Acts were discovered in five instances by the Sanitary Inspectors, viz., defective floor, basin, or seat of w.c. in three, defective inspection chamber in one, and dampness of walls in the remaining case, and were all abated after notice.

### Workshops.

Exclusive of bakehouses, there are in the Borough 145 workshops, of which 22 are domestic workshops. During the year 506 inspections were made by the Sanitary Inspectors with the result that in nine instances nuisances were detected and abated after notice, viz., want of cleanliness in four, blocked lavatory basin in one, defective guttering in one, defective paving in two, and defective w.c. in one.

## Workplaces.

There are 74 workplaces on the Register, and of these 287 inspections were made in the course of the year. One notice only, viz., to limewash the walls of the premises, required to be served, and this was promptly complied with. As in previous years particular attention has been paid to the condition of restaurant kitchens, of which there are a large number in the Borough; these premises have in several instances been renovated and altered structurally so as to render them more suitable for the business carried on, and it may be said that their condition as to cleanliness has very much improved.

## Outworkers.

Ten lists of outworkers giving 24 addresses of outworkers were received twice during the year from employers, and ten lists with eighteen addresses were received once in the year; the 42 addresses in all thus received related to 35 different outworkers, of whom 20 reside in the Borough and 15 in other sanitary districts the Medical Officer of which was duly informed of the particulars. Eleven lists of outworkers residing in the Borough were received from the Medical Officers of other districts; these gave 15 addresses and related to six separate persons only. The total number of outworkers resident in the Borough is 25, of whom 21 are engaged in making, &c., wearing apparel and four in upholstery work.

Each year difficulties have arisen in obtaining from local employers of labour the names and addresses of their outworkers, and the Health Committee consequently caused to be sent to 178 tradesmen, likely to employ persons to whom the section dealing with outworkers would apply, a strongly-worded letter threatening legal proceedings in the event of any further neglect to comply with the law. The importance of a proper observance of the requirements is obvious as not only are the hygienic conditions under which the outworker works kept under observation, but upon the occurrence of an infectious disease in his house measures can be taken to prevent any spread of infection by means of the wearing apparel, &c., which is in course of being made.

### Intimations from Factory Inspector.

Five intimations of the occurrence in factories and workshops of nuisances remediable under the Public Health Acts but not under the Factory and Workshops Act were received from H.M. Inspector during the year. In four instances the complaint was with respect to the use of a gas burner, not provided with a proper flue, for heating the irons used in tailoring, &c.; the nuisance was abated in two of the cases by providing means by which the fumes could escape, but in the other two instances further inspection showed that no objection could be raised to the method in which the gas burners were then being used. The other complaint was as to the improper and insufficient privy accommodation provided at a factory owing to the collapse of the building formerly in use, and this nuisance was promptly abated on service of a notice by the Sanitary Inspector.

### Sanitary Accommodation.

The Public Health Amendment Act, 1890, being in force in this district, the Sanitary Accommodation Order made by the Home Secretary does not apply to the local factories and workshops, but identical standards of sufficiency and suitability of the sanitary accommodation are laid down in the Regulations made by the Council under Section 22 of the Act.

### Bakehouses.

There are 39 workshop bakehouses and three factory bakehouses on the Register and 289 inspections of these premises were made during the year. Three notices to abate nuisances were served and were duly complied with; one had reference to general want of cleanliness of the premises, one to the dirty condition of a w.c., and the other to defective paving. Two new bakehouses were built during the year, the plans having been previously examined in the Health Department to ensure that the buildings would be suitable for the purpose intended. The three underground bakehouses continue in use, and are frequently inspected; the ventilation appears to be well maintained and no complaint has had to be made regarding their cleanliness.

# METEOROLOGICAL OBSERVATIONS, 1909.

## MAXIMUM THERMOMETER.

| Month. | Mean Deg. | Highest Deg. | Date. | Lowest Deg. | Date. |
|---|---|---|---|---|---|
| January ... | 42 | 47 | 3rd | 29 | 29th |
| February ... | 42.5 | 53 | 5th & 16th | 33 | 28th |
| March ... | 43 | 56 | 30th | 34 | 1st, 2nd, 4th & 5th |
| April ... | 57.5 | 69 | 13th | 45 | 3rd & 4th |
| May ... | 61 | 80 | 23rd | 50 | 2nd |
| June ... | 61.5 | 72 | 1st | 52 | 4th |
| July | 63.5 | 76 | 19th | 57 | 1st |
| August ... | 74 | 86 | 13th | 60 | 27th |
| September ... | 59 | 68 | 4th, 7th & 25th | 55 | 29th |
| October ... | 59 | 67 | 3rd, 4th & 5th | 42 | 31st |
| November ... | 50 5 | 59 | 7th | 39 | 24th |
| December ... | 43.5 | 51 | 29th | 37 | 8th, 21st & 22nd |

## MINIMUM THERMOMETER.

| Month | Mean deg. | Highest deg. | Date. | Lowest deg. | Date. |
|---|---|---|---|---|---|
| January | 34 | 43 | 3rd & 4th | 22 | 28th |
| February | 32.5 | 45 | 4th & 5th | 26 | 23rd |
| March | 34 | 45 | 30th | 21 | 5th |
| April | 42 | 49 | 14th & 18th | 30 | 5th |
| May | 46 | 60 | 29th & 30th | 35 | 2nd |
| June | 48.5 | 56 | 20th | 40 | 11th & 12th |
| July | 49 | 58 | 18th | 45 | 2nd |
| August | 54 | 65 | 16th | 47 | 3rd & 22nd |
| September | 49 | 56 | 25th | 41 | 2nd, 3rd & 8th |
| October | 48 | 57 | 17th | 30 | 30th |
| November | 35.5 | 46 | 3rd | 27 | 26th |
| December | 34 | 44 | 23rd & 28th | 26 | 20th & 21st |

## BAROMETER.

| Month. | Highest Reading. | Date. | Lowest Reading. | Date. |
|---|---|---|---|---|
| January ... | 30.60 | 2nd | 29.10 | 15th |
| February ... | 30.35 | 22nd | 29.15 | 10th |
| March ... | 29.75 | 30th | 28.70 | 15th |
| April ... | 30.40 | 3rd, 4th, 5th | 29.55 | 13th, 14th. 24th. 25th. 27th] |
| May ... | 30.35 | 3rd | 29.55 | 26th |
| June | 30.25 | 18th | 29.30 | 22nd |
| July ... | 30.25 | 20th | 29.50 | 7th |
| August . | 30.20 | 6th, 12th, 15th | 29.50 | 18th |
| September ... | 30.15 | 14th,15th,24th,27th | 29.55 | 7th |
| October ... | 30.20 | 9th | 29.44 | 27th |
| November ... | 30.30 | 24th | 29.35 | 30th |
| December ... | 30.30 | 14th, 30th | 28.65 | 3rd |

# RAINFALL.

| Month | Total Rainfall Inches. | Quarterly Rainfall. | Highest Rainfall Inches. | Date. |
|---|---|---|---|---|
| January ... | .80 | 4.36 | .14 | 15th |
| February ... | .90 | | .32 | 10th |
| March ... | 2.66 | | 1.05 | 3rd |
| April ... | 1.38 | 5.54 | .48 | 19th |
| May ... | 1.04 | | .32 | 24th |
| June ... | 3.12 | | .58 | 3rd |
| July .. | 3.38 | 7.54 | 1.11 | 27th |
| August .. | 2.34 | | .78 | 24th |
| September .. | 1.82 | | .30 | 28th |
| October ... | 4.02 | 8.33 | 2.00 | 26th |
| November ... | 1.57 | | .53 | 14th |
| December ... | 2.74 | | .45 | 16th |

## TOTAL RAINFALL IN PAST YEARS.

| | | |
|---|---|---|
| 1909 | 25.77 inches. | Rain fell on 154 days. |
| 1908 | 18.69 inches. | Rain fell on 130 days. |
| 1907 | 19.98 inches. | Rain fell on 173 days. |
| 1906 | 23.21 inches. | Rain fell on 149 days. |
| 1905 | 17,89 inches. | Rain fell on 150 days. |
| 1904 | 18.46 inches. | Rain fell on 130 days. |
| 1903 | 31.66 inches. | Rain fell on 171 days. |
| 1902 | 18.51 inches. | Rain fell on 134 days. |
| 1901 | 14.83 inches. | Rain fell on 107 days. |
| 1900 | 20.51 inches. | Rain fell on 143 days. |
| 1899 | 22.38 inches. | Rain fell on 128 days. |
| 1898 | 15.76 inches. | Rain fell on 99 days. |
| 1897 | 21.23 inches. | Rain fell on 125 days. |
| 1896 | 21.74 inches. | Rain fell on 141 days. |
| 1895 | 19.38 inches. | Rain fell on 145 days. |
| 1894 | 24.94 inches. | Rain fell on 193 days. |
| 1893 | 17.61 inches. | Rain fell on 128 days. |
| 1892 | 21.83 inches. | Rain fell on 141 days. |
| 1891 | 19.01 inches. | Rain fell on 160 days. |

## WIND.

(Days of Prevalence in each Month of the Year).

| Month. | N | S | E | W | NE | SW | NW | SE | WNW |
|---|---|---|---|---|---|---|---|---|---|
| January | 4 | 1 | 2 | 11 | 3 | 5 | 3 | 1 | 1 |
| February | 5 |  | 4 | 8 | 3 | 2 | 3 | 3 |  |
| March | 5 | 3 | 2 | 1 | 2 | 7 | 7 | 4 |  |
| April | 2 | 2 |  | 1 | 7 | 11 | 3 | 4 |  |
| May | 4 | 2 | 2 | 3 | 7 | 5 | 4 | 4 |  |
| June | 2 | 1 |  | 1 | 8 | 9 | 9 |  |  |
| July | 1 | 2 |  | 1 |  | 18 | 9 |  |  |
| August |  | 2 |  | 2 | 6 | 13 | 7 | 1 |  |
| September | 6 | 1 | 1 | 2 | 5 | 3 | 9 | 3 |  |
| October | 1 | 6 |  | 4 | 2 | 12 | 2 | 4 |  |
| November | 4 | 1 |  | 4 | 7 | 3 | 10 | 1 |  |
| December |  | 5 | 4 | 6 | 2 | 11 | 3 |  |  |

## Table showing Number of Hours of Sunshine in each month during the last 6 years.

| | 1904. | 1905. | 1906. | 1907. | 1908. | 1909. |
|---|---|---|---|---|---|---|
| January ... .. | 60¼ | 90¾ | 98½ | 59 | 87 | 74¾ |
| February ... ... | 78 | 108½ | 82½ | 87 | 81¼ | 105¾ |
| March ... ... | 111¾ | 191¾ | 115¼ | 193¼ | 99 | 72¾ |
| April ... ... | 185 | 122¼ | 226½ | 155½ | 143½ | 229½ |
| May ... ... | 178 | 274 | 182½ | 180 | 187 | 315½ |
| June ... ... | 264¼ | 194¼ | 154 | 175¾ | 253¼ | 136¼ |
| July ... .. | 279¾ | 285½ | 269 | 181¾ | 216½ | 190 |
| August ... . | 316¾ | 209¼ | 216½ | 196½ | 235 | 231 |
| September ... . | 175½ | 131½ | 201 | 178¼ | 162½ | 128 |
| October .. ... | 109¾ | 125¼ | 135 | 85½ | 156¼ | 97 |
| November ... ... | 97¼ | 70¼ | 54½ | 55¼ | 84¼ | 105¾ |
| December ... . | 53¼ | 41½ | 57 | 62¼ | 33½ | 68¼ |
| TOTAL ... | 1891½ | 1844¾ | 1792¼ | 1610 | 1739 | 1754½ |

# TABLE I.

## Vital Statistics of Whole District during 1909 and previous years.

| Year. | Population estimated to middle of each Year. | Births. | | Total Deaths Registered in the District. | | | | Total deaths in Public Institutions in the District. | Deaths of Non-Residents registered in Public Institutions in the District. | Deaths of Residents registered in Public Institutions beyond the District. | Net Deaths at all ages belonging to the District. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Under 1 Year of Age. | | At all Ages. | | | | | | |
| | | Number. | Rate. | Number. | Rate per 1,000 Births registered | Number. | Rate. | | | | Number. | Rate. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 1899 | 24,710 | 657 | 26·58 | 121 | 184·17 | 400 | 16·1 | 23 | 29 | 13 | 384 | 15·54 |
| 1900 | 27,721 | 739 | 26·62 | 135 | 182·40 | 416 | 14·64 | 34 | 37 | 21 | 400 | 14·44 |
| 1901 | 29,793 | 781 | 26·21 | 140 | 179·25 | 507 | 17·01 | 55 | 23 | 28 | 502 | 16 84 |
| 1902 | 33,537 | 839 | 25·01 | 84 | 100·11 | 459 | 13 09 | 53 | 22 | 29 | 446 | 13·29 |
| 1903 | 37,283 | 935 | 25 07 | 111 | 118·71 | 448 | 12·01 | 33 | 22 | 17 | 443 | 11·88 |
| 1904 | 41.944 | 1,007 | 24·01 | 180 | 178·74 | 592 | 14·11 | 35 | 26 | 30 | 596 | 14·20 |
| 1905 | 46,380 | 1,060 | 22·85 | 126 | 118·86 | 508 | 10·95 | 27 | 19 | 25 | 514 | 11·08 |
| 1906 | 50,302 | 1,095 | 21·76 | 154 | 140·64 | 578 | 11·49 | 35 | 24 | 39 | 593 | 11·78 |
| 1907 | 53,283 | 1,042 | 19·38 | 98 | 94·05 | 564 | 10·59 | 37 | 26 | 46 | 584 | 10·97 |
| 1908 | 57,399 | 1,098 | 19·12 | 101 | 91·98 | 519 | 9 04 | 57 | 20 | 40 | 539 | 9 39 |
| Averages for years 1899-1908. | 40,235 | 925 | 22·98 | 125 | 135·13 | 497 | 12 35 | 39 | 25 | 29 | 500 | 12·42 |
| 1909 | 61,268 | 1,139 | 18·59 | 85 | 74·62 | 616 | 10·05 | 48 | 23 | 38 | 631 | 10·29 |

| I. | II. | III. |
|---|---|---|
| Institutions within the District receiving sick and infirm persons from outside the District. | Institutions outside the District receiving sick and infirm persons from the District. | Other Institutions, the deaths in which have been distributed among the several localities in the District. |
| Southend Victoria Hospital<br>Nazareth House<br>St. Mary's Convent<br>St. Mary's Home | Union Workhouse, Rochford<br>Charing Cross Hospital<br>Westminster Hospital<br>Freidenheim Hospital, Hampstead | Southend Victoria Hospital<br>Borough Sanatorium<br>Nrzareth House<br>The Creche |

| | | | | |
|---|---|---|---|---|
| Area of District in acres (exclusive of area covered by water). | 5,172 | Total Population at all ages | 28,857 | At Census of 1901. |
| | | No. of Inhabited Houses | 5,417 | |
| | | Average No. of persons per house | 5·3 | |

# TABLE III.

## Cases of Infectious Disease notified during the Year 1909.

| Notifiable Disease. | Cases Notified in Whole District. | | | | | | | Total Cases Notified in Each Locality. | | | | | No. of Cases Removed to Hospital from Each Locality | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | At all Ages. | Under 1. | 1 to 5. | 5 to 15. | 15 to 25. | 25 to 65. | 65 and upwards. | 1 St. John's | 2 St. Mary's | 3 (H) St. Alban's | 4 All Saints | 5 Southchurch | 1 St. John's | 2 St. Mary's | 3 St. Alban's | 4 All Saints | 5 Southchurch | 8 Tot'l cases removed to Hospital. |
| Diphtheria (including Membranous Croup) | 74 | | 12 | 51 | 8 | 3 | | 18 | 22 | 14 | 13 | 7 | 18 | 14 | 7 | 10 | 6 | 55 |
| Erysipelas ... ... | 19 | | | | 2 | 16 | 1 | 3 | 7 | 3 | 4 | 2 | | | | | | |
| Scarlet Fever ... | 183 | 1 | 29 | 119 | 20 | 14 | | 45 | 69 | 25 | 32 | 12 | 38 | 60 | 20 | 27 | 11 | 156 |
| Enteric Fever ... | 2 | | | 1 | 1 | | | 1 | 1 | | | | 1 | 1 | | | | 2 |
| Puerperal Fever ... | 1 | | | | | 1 | | | 1 | | | | | | | | | |
| Pulmonary Tuberculosis (voluntary) | nil. | | | | | | | | | | | | | | | | | |
| Totals ... ... | 279 | 1 | 41 | 171 | 31 | 34 | 1 | 67 | 100 | 42 | 49 | 21 | 57 | 75 | 27 | 37 | 17 | 213 |

Isolation Hospitals— { Borough Sanatorium, Balmoral Road. Total available beds 63, of which five are isolation and discharge-ward beds. Three diseases can be treated conveniently.
Smallpox Hospital, Sutton Road. Total available beds, 12.

# TABLE IV.

## Causes of, and Age at, Death during Year 1909.

| CAUSES OF DEATH. | Deaths at the subjoined ages of "Residents," whether occurring in or beyond the district | | | | | | | Deaths at all ages of "Residents" belonging to localities, whether occurring in or beyond the district. | | | | | | Total Deaths whether of "Residents" or "Non-Residents" in Public Institutions in the District. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | All Ages. 2 | Under 1 year. 3 | 1 and under 5. 4 | 5 and under 15. 5 | 15 and under 25. 6 | 25 and under 65. 7 | 65 and upwards. 8 | St. John's 9 | St. Mary's 10 | St. Alban's 11 | All Saints 12 | Southchurch 13 | On the Foreshore of Thames 14 | 16 |
| Measles ... . ... ... | 9 | 2 | 5 | 2 | ... | ... | .. | 3 | 2 | 3 | 1 | ... | ... | ... |
| Scarlet Fever ... .. .. | 3 | . | | ... | ... | | ... | ... | 2 | . | 1 | ... | .. | 2 |
| Whooping Cough ... ... | 11 | 4 | 7 | .. | ... | .. | ... | 5 | 2 | ... | 3 | 1 | ... | ... |
| Diphtheria (including Membranous Croup) ... .. | 4 | ... | 2 | 2 | .. | ... | ... | 2 | ... | 1 | 1 | ... | | 3 |
| Epidemic Influenza ... .. | 13 | 1 | ... | .. | 1 | 7 | 4 | 3 | 6 | 3 | 1 | .. | ... | ... |
| Diarrhœa ... ... ... .. | 5 | 3 | 1 | ... | ... | ... | 1 | 4 | ... | ... | | 1 | ... | ... |
| Enteritis ... ... ... ... | 6 | 5 | ... | .. | .. | 1 | ... | .. | 3 | ... | 3 | ... | .. | 2 |
| Puerperal Fever . ... | 1 | .. | ... | .. | 1 | .. | .. | ... | 1 | .. | ... | ... | ... | ... |
| Phthisis (Pulmonary Tuberculosis) .. ... .. | 74 | 1 | ... | 1 | 9 | 62 | 1 | 19 | 16 | 12 | 23 | 4 | ... | 2 |
| Other Tuberculous Diseases ... | 25 | 2 | 15 | 2 | 1 | 5 | ... | 11 | 8 | 3 | 1 | 2 | ... | 4 |
| Cancer, Malignant Disease .. | 38 | ... | ... | . | ... | 25 | 13 | 9 | 15 | 3 | 10 | 1 | .. | 1 |
| Bronchitis ... .. ... | 45 | 6 | 2 | 1 | 1 | 10 | 25 | 17 | 7 | 3 | 15 | 3 | ... | 3 |
| Pneumonia .. . ... | 28 | 10 | ... | 1 | .. | 14 | 3 | 12 | 5 | 2 | 9 | ... | ... | ... |
| Pleurisy ... ... .. .. | 1 | | ... | .. | .. | 1 | | ... | .. | 1 | ... | ... | .. | ... |
| Other Diseases of Respiratory Organs ... .. ... | 14 | 1 | 6 | ... | ... | 3 | 4 | 2 | 6 | 4 | 2 | ... | ... | 1 |
| Alcoholism, Cirrhosis of Liver | 9 | ... | ... | ... | 1 | 6 | 2 | 4 | 2 | 2 | 1 | ... | ... | ... |
| Venereal Diseases ... .. | 2 | 2 | ... | ... | ... | . . | .. | 1 | 1 | . | ... | ... | ... | ... |
| Premature Birth . .. | 18 | 18 | .. | ... | .. | ... | ... | 3 | 2 | 4 | 4 | 5 | . | ... |
| Diseases and Accidents of Parturition .. ... .. | 2 | ... | ... | ... | ... | 2 | ... | 1 | . | 1 | .. | ... | ... | 1 |
| Heart Diseases ... ... ... | 65 | 1 | . | 2 | 4 | 29 | 29 | 19 | 17 | 13 | 11 | 5 | | 3 |
| Accidents ... . .. | 12 | 2 | ... | 1 | 2 | 5 | 2 | 2 | 3 | | 2 | ... | 5 | 3 |
| Suicides ... ... ... ... | 7 | ... | ... | .. | 1 | 5 | 1 | 2 | 2 | 1 | 1 | 1 | | 2 |
| All other causes ... . | 239 | 27 | 10 | 13 | 5 | 74 | 110 | 71 | 45 | 41 | 60 | 19 | 3 | 21 |
| All causes .. .. ... | 631 | 85 | 51 | 25 | 26 | 249 | 195 | 190 | 145 | 97 | 149 | 42 | 8 | 48 |

# TABLE V.

## Infantile Mortality during the Year 1909.

Deaths from stated Causes in Weeks and Months under one Year of Age.

| CAUSE OF DEATH. | Under 1 Week | 1-2 Weeks | 2-3 Weeks | 3-4 Weeks | Total under 1 Month | 1-2 Months | 2-3 Months | 3-4 Months | 4-5 Months | 5-6 Months | 6-7 Months | 7-8 Months | 8-9 Months | 9-10 Months | 10-11 Months | 11-12 Months | Total Deaths under 1 Year |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All Causes Certified | 21 | 4 | 5 | 5 | 35 | 9 | 5 | 5 | 2 | 5 | 5 | ... | 5 | 4 | 2 | 4 | 81 |
| Uncertified | 1 | ... | 1 |  | 2 | 1 | ... | ... |  | ... | .. | ... | ... | .. | ... | 1 | 4 |
| Common Infectious Diseases :— |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Measles | ... | . | ... | ... | .. | ... | ... | ... |  |  | ... | ... | 2 | ... |  | ... | 2 |
| Whooping Cough | . | .. | . | ... |  | ... | 1 | 1 | ... | ... | ... | ... | ... | 1 |  | 1 | 4 |
| Diarrhœal Diseases :— |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Diarrhœa, all forms |  | ... | . | ... | .. | 1 | ... | 2 | ... |  | ... | ... |  | ... | . | . | 3 |
| Enteritis, Muco-enteritis, Gastro-enteritis | ... | ... | ... | .. | ... | ... | .. | 1 | ... | 2 | 1 | ... |  | 1 | .. | ... | 5 |
| Wasting Diseases :— |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Premature Birth | 11 | 1 | 3 | 1 | 16 | 2 |  | .. | ... | ... | ... | ... | ... | ... |  | . | 18 |
| Congenital Defects | 5 | ... | ... | 1 | 6 | 2 | ... | ... | . | ... | ... | ... |  | ... | . | 1 | 9 |
| Injury at Birth | 1 | ... | ... | .. | 1 | ... | ... | ... | ... |  | ... | ... | . | ... | ... | .. | 1 |
| Want of Breast-milk, Starvation | .. | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | .. | ... | ... |  | ... | . | 1 |
| Atrophy, Debility, Marasmus | ... |  | 1 | ... | 1 | 2 | 1 | 1 | 1 | 1 | ... | ... | ... | ... |  | ... | 7 |
| Tuberculous Diseases :— |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Tuberculous Peritonitis: Tapes Mesenterica | ... | ... | .. | .. | ... | ... | ... |  | ... | ... | 1 | ... | ... | .. | ... | 1 | 2 |
| Other Tuberculous Diseases | ... | ... |  | ... |  | ... | .. | ... | ... | .. | ... | .. | ... | ... | 1 | .. | 1 |
| Other Causes :— |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Syphilis | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | 1 | ... | 1 | ... | ... |  | 2 |
| Meningitis (not Tuberculous) |  | .. | ... | ... | ... | ... | ... | ... | ... | 1 | ... |  | ... | ... |  | ... | 1 |
| Convulsions | 3 | 1 | ... | ... | 4 | ... |  | ... | ... | ... | ... | ... | .. |  | . |  | 4 |
| Bronchitis | ... |  | 1 | 1 | 2 | 1 | ... | ... | ... | . | . | ... | 1 | 2 | ... |  | 6 |
| Pneumonia | ... | 1 | 1 | ... | 2 | 1 | 1 | ... | 1 | 1 | 2 | ... | 1 | ... | 1 | ... | 10 |
| Suffocation, overlying | ... | ... | . | . | ... | ... | 1 | ... | .. | ... | ... | . | ... | ... | ... |  | 1 |
| Other Causes | 2 | 1 | ... | 1 | 4 | 1 | 1 | ... |  | ... | ... | ... | . | ... | ... | 2 | 8 |
|  | 22 | 4 | 6 | 5 | 37 | 10 | 5 | 5 | 2 | 5 | 5 | ... | 5 | 4 | 2 | 5 | 85 |

Population (estimated to middle of 1909) 61268.

Births in the year—Legitimate 1102.

" " " Illegitmate 37.

Deaths in the year of Legitimate Infants 76.

" " " Illegitimate Infants 9.

Deaths from all Causes at all Ages 631.

# INDEX.

PAGE

## Statistics.

Statistical Summary ........ 8

Vital Statistics—

- Population ........ 12
  - Density of Population ........ 14
- Births ........ 14
- Deaths ........ 15
  - Uncertified Deaths ........ 17
  - Inquests ........ 19
  - Ages at Death ........ 20
  - Infantile Mortality ........ 21
  - Deaths from Zymotic Diseases ........ 25
  - Deaths from Cancer ........ 25

## The Notifiable Infectious Diseases.

Notifiable Infectious Diseases ........ 30

Tuberculosis—

- Deaths ........ 32
- Imported Cases ........ 32
- Precautions taken by Patients ........ 33
- Voluntary Notification ........ 34
- Disinfection ........ 36
- Diagnosis of Early Cases ........ 36
- Poor Law Patients ........ 36
- General Remarks ........ 37

Notifiable Zymotic Diseases—

- Smallpox ........ 41
- Typhoid Fever ........ 51

PAGE
Scarlet Fever ... 42
  Mode of Infection ... 43
  Precautions taken ... 44
  Method of Isolation ... 44
  Mortality ... 44
  Details of Outbreaks ... 44
Diphtheria ... 47
  Number of Houses invaded ... 48
  Mode of Infection ... 49
  Precautions taken ... 49
  Method of Isolation ... 50
  Mortality ... 50
  Remarks ... 50

Other Notifiable Diseases—

Puerperal Fever ... 57
Erysipelas ... 57

The Non-Notifiable Zymotic Diseases—

Diarrhœa ... 58
Measles ... 59
Whooping Cough ... 61

Other Infectious Diseases—

Mumps ... 62
Chicken Pox ... 62
Disinfection after Infectious Diseases ... 62
Drain Testing after Occurrence of Infectious Diseases ... 63
Borough Sanatorium ... 64
  Statistics ... 65
  Improvements during the year ... 66
  Cost of Maintenance, &c. ... 67
Smallpox Hospital ... 68
The Borough Laboratory ... 68

## **Sanitary Inspection and Administration.**

Systematic Inspection ... 72
Cesspools ... 72
Van Dwellers, &c. ... 73
Public House Urinals ... 76
Garden Refuse, &c. ... 77
Poultry Runs ... 78
Back Passages ... 79
Paving of Back Yards ... 80

PAGE

General Sanitary Work 80
Summary of Inspectors' Work 80

Housing of Working Classes—

Houses for the Working Classes Act, 1890 84
House Accommodation 85
New Houses 89
Town Planning 90
Sanitary Condition 92

House Refuse—

Collection of House Refuse 93
Disposal of House Refuse 94
The Proposed Destructor 96
Sewerage and Sewage Disposal 96
Common Lodging Houses 97
Offensive Trades 97
Slaughterhouses 97
Public Mortuary 99

Supervision of Food Supplies—

The Dairies, Cowsheds and Milkshops Order 100
The Meat Supply 102
The Fish Supply 102
Fruit and Vegetables 103
Ice Cream 104
Restaurant Kitchens, &c. 104
Sale of Food and Drugs Acts 104
Water Supply 106

**Prosecutions** 108

**Summary of Improvements** 109
Improvements still required 109

**Factory and Workshops Act, 1901** 112
Factories 113
Workshops 113
Workplaces 114
Outworkers 114
Intimations from Factory Inspector 115
Sanitary Accommodation 115
Bakehouses 115

**Meteorological Notes** 116—122

**Local Government Board Tables** I, III, IV, V 123—126